

## Original Research Article

# Menstrual cup awareness and preference among college going women in Tenkasi district, Tamil Nadu: a cross sectional survey

M. Fathima Kani\*, Achamma Varghese

Department of Nursing, Shri Jagdishprasad Jhabarmal Tibrewala University, Rajasthan, India

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### \*Correspondence:

M. Fathima Kani,

E-mail: [mfathimakani@gmail.com](mailto:mfathimakani@gmail.com)

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## ABSTRACT

**Background:** Menstrual hygiene is an important aspect of women's health. Every month, half of India's population experiences menstruation. However, still India has strong sociocultural taboos concerning menstruation. Menstruation cups (MC) have become more and more well-liked as an affordable and environmentally responsible replacement for conventional menstruation products in recent years. In India, they are still not widely recognized because of cultural constraints. The primary objective of this study was to identify the MC Awareness and preference among college-going women.

**Methods:** This descriptive cross-sectional study was conducted among college-going women in Tenkasi district, Tamil Nadu, India between June 2023 and August 2023 with a predesigned structured questionnaire. The sample size of the study was 120 college-going women included in this study. SPSS software was used for the data analysis.

**Results:** The participant's mean age was  $19.08 \pm 3.14$  years. More than half of the participants had low awareness of MC (56.6%). None of the participants were using MC as the choice for menstrual management currently. The main reasons for not preferring the MC as the future choice were leakage (65%), difficulty to use (58.3%), infection (56.6%), it might produce complications (56.6%), and pain and discomfort (50%).

**Conclusions:** The awareness and future preferences for the MC were low. Young educated women have less awareness and less preference for MC shows the necessity of the creation of awareness programs at the community level. The healthcare sector needs to take the necessary steps to increase the utilization of MC to follow proper menstrual hygiene.

**Keywords:** Menstrual cup, Menstrual hygiene, Menstruation, Menstrual cup knowledge

## INTRODUCTION

Adolescent girls and women experience menstruation as a natural, normal biological process that lasts from menarche to menopause. In India, Menstrual Health Management (MHM) has gone through several stages and significant turning points, such as discouraging menstruation talk and launching programs to provide sanitary pads for women and girls. Menstrual hygiene is linked to gender equality and fundamental human rights, as well as women's health, confidence, and self-esteem.<sup>1</sup> A systematic review confirmed the presence of

environmental chemicals in many of the studies with discrepant conclusions on exposure risks.<sup>2</sup> This study recommended this chemical absorption on the human being. So, the sanitary pads pose the risk of chemical exposure.

An investigation of the experience of using MC, a sustainable substitute for sanitary pads, was carried out by the ICMR recently.<sup>3</sup> MC is a practical and efficient sanitary tool that can be used as an alternate technique, according to the study. To achieve greater adoption, nevertheless, additional promotion and awareness-raising

are needed by utilizing already-existing venues. Future research on the sociocultural facets of MC acceptance in rural India is also suggested by the study.<sup>3</sup>

According to National Family Health Survey 5, the women in the 15–24 age range, 42% use sanitary napkins, 62% use cloth, and 16% use napkins that are made locally. Overall, a hygienic technique of menstruation protection is used by 58% of women in this age range.<sup>4</sup>

In India, only 0.3% of women between the ages of 15 and 24 use MC or other reusable period devices. On the other hand, 77% of them use disposable period items, such as tampons and sanitary napkins (NGHS, 5).<sup>4</sup>

A non-absorbent, bell-shaped device termed a MC is placed into the vagina to collect menstrual flow. The walls of the vagina hold it in place as it forms a seal. The MC is a silicone device used to collect menstrual blood that is inserted into the vagina under the uterine cervix.<sup>5</sup>

Three times as much blood is collected by it than by pads or tampons and must be emptied every 6 to 12 hours. If facilities permit, it should then be washed and reinserted. Every monthly cycle, the cup needs to be boiled for five to ten minutes. At least two sizes are offered by the majority of manufacturers, and various shapes are increasingly popular. Cups can be reused for five to ten years.<sup>6</sup>

When comparing MC to pads or tampons, the purchase costs and waste from them will be much lower. For example, if compared to using 12 pads per period, using a MC would comprise 5% of the purchase costs and 0.4% of the plastic waste; if compared to using 12 tampons per period, using a MC would comprise 7% of the purchase costs and 6% of the plastic waste. These figures are based on rough calculations over 10 years period.<sup>7</sup>

MC is not widely known in India, but some of the studies indicated that they can be a safe and acceptable option for menstrual hygiene in high-income, low-income, and middle-income nations. Even in areas with inadequate access to water and sanitation, MC can serve as a viable substitute for disposable sanitary items.<sup>7</sup>

Only a few studies are available with the MC. The result of these studies varies with the different parts of India. It is essential to study MC, that would bring acceptability of MC.

## METHODS

This cross-sectional descriptive study was carried out from the selected area of Tenkasi, Tamil Nadu between June 2023 and August 2023. This Menstruation awareness study was approved by JTT University. Participants in this study were comprised female college students (Undergraduate) with voluntary participation.

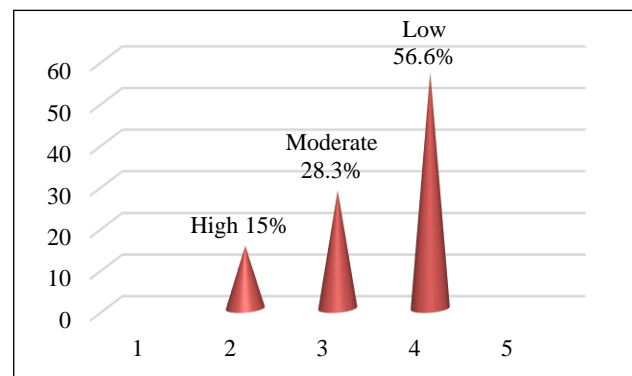
This study eliminated those who were unwilling to participate. Stratified random sampling was used to select the participants.

Pre structured questionnaire was used to collect the data. The study instrument includes 3 sections. Section 1 with Socio-demographic variables like age, program of study, year of study, monthly family income, father and mother educational status, and current materials used in menstruation. Section 2 includes Awareness questions and Section 3 includes future preferences.

Data was entered in Excel and analyzed with SPSS version 26. The mean age of the participants was calculated. The awareness level was assessed and categorized with frequency and percentage. A chi-square test was done to identify the association between demographic variables and awareness levels.

## RESULTS

Figure 1 analyzes the distribution of the level of awareness of MC. Even though 15% of the participants had high knowledge, 28.3% of them had moderate knowledge none of them had used MC. More than half of the participants had low knowledge (56.6%). Out of 120 participants, 90 of them heard about MC. 48 of them are considered to be safe. 60 of them agreed to be economical. 60 of them are aware of that the MC helps to collect the menstrual flow. 55 of them responded that the MC can be reused.



**Figure 1: Level of awareness on MC.**

Table 2 shown, only 16.6% of the participants preferred to use MC in future.

Two third of the participants had satisfied with the current management. More than half of the participants reasoned out for not preferring MC as choice due to leakage (65%), difficulty in insertion (58.3%), infection (56.6%), it might produce complications (56.6%) and pain and discomfort (50%).

Table 3 had identified that the participants from the medical background and higher monthly income had significant awareness among the women.

**Table 2: Description of the preferences (willingness) of MC in future (n=120).**

Preferences (Willingness)	Overall	
	f	%
<b>Prefer or willing to use for future</b>		
Yes	20	16.6
No	100	83.3
<b>The reason for not preferred MC as the option of menstrual management in future because,</b>		
It might be Difficult for insertion	70	58.3
It might cause pain or discomfort	60	50
It might cause infection	68	56.6
It may lead to leakage	78	65
I don't have access to get MC	60	50
I am satisfied with the current management.	80	66.6
It may produce some complications	68	56.6

**Table 3: Frequency and percentage wise distribution of demographic data (n=120).**

Demographic variables	Frequency	Percentage	X <sup>2</sup> -test
<b>Age: mean age</b>	19.08± 3.14 years		
<b>Religion</b>			
Hindu	60	50	Ns
Muslim	35	29	
Christian	25	21	
<b>Educational background</b>			
Arts	38	31.6	X <sup>2</sup> =60.93 P-value is <0.00001. S
Science	32	26.6	
Engineering	30	25	
Medical related courses	20	16.6	
<b>Mothers educational status</b>			
Illiterate	28	23.3	Ns
Secondary	27	22.5	
Higher secondary	43	35.8	
Graduate & post graduate	22	18.3	
<b>Father educational status</b>			
Illiterate	12	10	Ns
Secondary	20	16.6	
Higher secondary	40	33.3	
Graduate & post graduate	48	40	
<b>Type of family</b>			
Joint	48	40%	Ns
Nuclear	72	60%	
<b>Current menstrual management</b>			
Sanitary pads	80	66.6	Ns
Cloths	40	33.3	
Menstrual cups	0	0	
<b>Family monthly income</b>			
Less than 20,000	38	31.6	X <sup>2</sup> =10.412 P=0.036* S
20,001-40,000	58	48.3	
40,001 and above	24	20	

Note: \*-Significant.

## DISCUSSION

In this study, MC was known to the majority of participants (93.4%). More than half of the participants

had low scores on the awareness of MC. Only 15% of the participants had high scores. This indicates the necessity of the awareness programs in the study area. Similar results were observed from a study from Bangalore.<sup>8</sup>

The results of the study from Mysuru showed 98% awareness, but this study included only the participant's only medical students. Another study from India had shown high awareness and also better awareness (93.4%) was noticed in a study from Kerala. However, only 15.1% have tried to use a MC.<sup>9,10</sup>

It was noted that the participants felt comfortable and satisfied with the current management and none of them were using the MC. Similarly, some of the Indian studies reported no usage or a very negligible amount of usage of MC.<sup>8-11</sup> High usage of sanitary pads was noted in this study due to ready availability. Another study from Gujarat also reported the most prevalent method of sanitary pad use was 96.06% and only 0.70% of them used MC.<sup>12</sup> According to data from the National Family Health Survey-5 (NFHS-5, 2019-21), 0.3% of women who have ever used MC.<sup>4</sup> Recent Indian studies reported MC as the low preferred option for menstrual management. Among Indian women in the reproductive age group, the MC is the least preferred option for menstrual hygiene management.<sup>8-11</sup>

This study identified the following factors that would be considered in developing an education plan: fear of insertion, discomfort, fear of complications, and leakage. A study from Kerala reported the major reason for not usage of MC as fear of insertion. Discomfort and leakage were the most important problems reported by participants.<sup>10</sup>

In this study, the participants with a medical education background and higher income significantly had higher awareness. Other studies reported the following variables had significantly influenced the awareness of MC: Younger age, higher education background, socioeconomic status, marital status and occupation.<sup>9,10</sup>

The Indian government and several state governments are taking necessary steps in initiating the steps towards awareness and usage of MC. To encourage the use of MC, the Kerala government has set aside Rs 10 crore in the state budget for awareness initiatives in the fiscal year 2023-2024. The goal of the initiative is to target colleges and institutions.<sup>13</sup> In a study in a tertiary care institute in eastern India, 68.9% of participants said they would keep using MC. after their third cycle. The mean satisfaction scores were increased from the first cycle to the third cycle. The majority of the participants reported no side effects.<sup>14</sup>

## CONCLUSION

Most of the participants had heard about the MC before, but none of them were using it either alone or along with sanitary pads. Only 16.6% of the participants preferred the usage of MC. The participants had concerns expressed by the participants, 58.7% were concerned about fear of insertion, discomfort, fear of complications, and leakage. For improved menstrual health and practice,

misconceptions about the menstrual cup need to be addressed.

## Recommendations

The results of this study showed that the participants were not considering MC as common method. There is a need of educational program among the school and college girls formally as well as through the mass media. Educate them about this important environmentally safe and eco-friendly method. The health care team need to work on orienting the women regarding MC will have impact on future reproductive policies. There is a necessity of longitudinal studies and quasi experimental studies on the usage, attitudes, reason for discontinuation and the satisfaction.

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