

# Knowledge, Attitude and Practices Regarding Menstrual Cup Among Females in an Urban Setting of South Kerala

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## Abstract

**Objective:** This study aims to assess the knowledge, attitude, and practices regarding menstrual cups use and the factors associated with it among females of the reproductive age group in an urban setting of South Kerala.

**Materials and methods:** We conducted a cross-sectional study from December 2021 to January 2022 among females of the reproductive age group. Data was entered in MS Excel and was analyzed using Statistical Package for Social Sciences version 26.0. The significance of association was tested using the Chi-square test. Binary logistic regression was done to predict the factors associated with knowledge levels regarding menstrual cup.

**Results:** The mean age of study participants was 25.68(SD 6.64) years. 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.

**Conclusion:** Most of the participants (93.4%) were aware of menstrual cups. Even though two third of the participants had good knowledge regarding menstrual cups, only 15.1% have tried to use a menstrual cup. Fear of insertion was the most common concern for not trying a menstrual cup. Discomfort and leakage were the most important problems reported by participants. Younger age and higher educational qualifications were found to be independently associated with knowledge levels regarding menstrual cups.

**Keywords:** Menstrual Cup; Knowledge; Attitude; Practices; Kerala

## Introduction

Menstruation is a complex coordinated biological process (1) and its onset indicates the start of

reproductive years in female life (2). Women and adolescent girls worldwide need safe, effective and affordable menstrual hygiene management product (3). A basket of choices like sanitary napkins, tampons, menstrual cup etc., are available in the market. All over the world, women and girls use their

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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 (4- 6). Menstrual cup is one of the safe, comfortable, eco-friendly and sustainable menstrual hygiene management products available throughout the world (7). Although they have been available for decades, their use in India is limited because of lack of awareness and due to popularity of sanitary pads. They 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 got relatively lesser side effects. They can be reinserted after emptying and requires simple boiling which makes them a better cost effective product available in the market (8).

Information on leakage, 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. This study aims to assess the knowledge, attitude and practices regarding menstrual cups use and the factors associated with it among reproductive age group women in an urban setting of South Kerala.

## Materials and methods

A cross sectional study was conducted in Sree Uthradom Thirunal Academy of Medical Sciences, Vencode, during December 2021 to January 2022 among females of reproductive age group. The study participants included students, staffs, and female attendees of this tertiary care institution. Undergraduate students, interns, doctors, staff nurses, office staff and adult females attending out-patient department of the hospital were included in the study. Women who were not willing to participate and those who had menopause were excluded from the study. Sample size was calculated using the formula, using prevalence of knowledge regarding menstrual cup in previous study, which was found to be 67% by Yadav et al and assuming an absolute precision of 5%, at 95% confidence interval, the sample size was

estimated as 350 (9). Participants were selected by stratified random sampling. Data was collected using a pre-designed structured questionnaire. Socio-demographic variables like age, educational status, socio-economic status, occupation, knowledge, attitude and practices on menstrual cup were asked. Data was entered in Microsoft Excel and was analyzed using SPSS version 26 (Armonk, NY: IBM Corp) Categorical variables were expressed as frequencies and proportions. Chi- square test was done to find the association between study variables and knowledge levels. The study was started after getting approval from Institutional Ethics Committee (No.268/Acad/SUTMS/2021). Informed consent was obtained from the study population and confidentiality was maintained throughout the study. No expenses were incurred from the participants.

## Results

The mean age of study participants was 25.68 (SD 6.64) years. More than half of the (69.1 %) of the participants belong to the age category 17-25 years. The socio-demographic characteristics of participants are given in Table 1.

**Table 1: Socio-demographic characteristics (n=350)**

	Category	Frequency	Percentage
Age (years)	17-25	242	69.1
	26-35	72	20.6
	36-45	31	8.9
	>45	5	1.4
Educational status	High school	7	2
	Higher secondary	31	8.9
	Under-graduate	175	50
	Graduate	94	26.9
	Post-graduate	35	10
	Others	8	2.3
Occupation	Student	168	48
	Doctor	22	6.3
	Intern	20	5.7
	Staff Nurse	10	2.9
	Office staff	13	3.7
	Others	117	33.4
Socioeconomic status	APL	293	83.7
	BPL	57	16.3
Marital status	Married	116	33.1
	Unmarried	234	66.9

**Knowledge regarding menstrual cup:** Among the

350 participants, 131(37.4%) responded their source of information regarding menstrual cup as friends, 28(8%) as family, 268(76.6%) as social media and 48(13.7%) as medical personnel. They had the freedom to choose multiple responses for that question. Knowledge regarding menstrual cup is illustrated in Table 2.

**Table 2:** Knowledge regarding menstrual cup (n=350)

	Category	Frequency	Percentage
Do you know about menstrual cup	Yes	327	93.4
	No	23	6.6
Menstrual cup is made of	Silicone	172	49.1
	Rubber	26	7.4
	Latex	21	6
	I don't know	131	37.5
Is menstrual cup a safe device	Yes	294	84
	No	56	16
How will you rate your knowledge on menstrual cup	< 4(Poor)	92	26.3
	5-7(Average)	181	51.7
	8-10(Good)	77	22

**Attitude regarding menstrual cup:** Lack of knowledge (22.6%) and fear of insertion (56.2%) were the major reasons for not trying menstrual cup. Among the respondents, 172(49.1%) were willing to use menstrual cup if it was provided free of cost to them. Among the study participants, 275(78.6%)

finds it as a cost-effective alternative when compared to other menstrual hygiene products. Out of the 350 participants, 53(15.1%) have tried to use menstrual cup and 52 of them recommended it to be used by others. The practice regarding menstrual cup is given in Table 3.

The participants were asked to rate their knowledge scores and were classified in to two categories based on their scores obtained. Among the females, 26.3% had scores below 4, 51.7% had scores between 5-7 and 22% had scores more than 8. Out of the 350 study participants, 258(73.7%) had good knowledge scores and 92(26.3%) had poor knowledge scores. A statistically significant association was found between younger age, educational status, socio-economic status and marital status of females in the reproductive age group and knowledge about menstrual cup. Results of Chi-square test is given in table 4. Binary logistic regression was done to predict the factors associated with knowledge levels. Younger age and higher educational qualification were found to be independently associated with knowledge levels regarding menstrual cup.

### Discussion

The findings of this study are found to be in consonance with several published studies in other settings.

**Table 3:** Practices regarding menstrual cup (n=53)

	Category	Frequency	Percentage
Finds menstrual cup user friendly	Yes	50	94.3
	No	3	5.7
Cleaning the menstrual cup during period days	Plain water	21	39.6
	Warm water	27	50.9
	Boiling/ Cleaning with disinfectant	4	7.5
	Others	1	1.9
Frequency of changing menstrual cup during normal menstrual cycle	1-2 times a day	14	26.4
	2-3 times a day	33	62.3
	>3 times a day	6	11.3
Problems encountered while using menstrual cup	Leakage	15	28.3
	Discomfort	23	43.1
	Itching	4	7.1
	Dryness	1	2.6
	No difficulty	9	16.9
	Others	1	1.9
Activities you find to do comfortably while using cup which you were hesitant to do while using regular sanitary napkin	Sleeping comfortably at night	34	64.15
	Sports activities	25	47.17
	Swimming	17	32
	Travelling	29	54.7
	Others	8	15

**Table 4:** Factors associated with good knowledge levels regarding menstrual cup

Category		Score		p-Value	OR (95% CI)
		Poor Knowledge	Good Knowledge		
Age category	Less than 25 years	48(52.2%)	194(75.2%)	< 0.001	0.36 (0.21-0.59)
	More than 25 years	44(28.4%)	64(24.8%)		
Educational status	SSLC/Plus two	16(17.4%)	22(8.6%)	0.01	2.25(1.1-4.5)
	Graduation and above	76(82.6%)	236(91.4%)		
Socio-economic Status	APL	69(75%)	224(86.8%)	0.008	0.45(0.25-0.82)
	BPL	223(25%)	34(13.2%)		
Marital Status	Married	47(51.1%)	69(26.7%)	< 0.001	2.86(1.7-4.7)
	Unmarried	45(49.9%)	189(73.3%)		

In a study conducted by Meghana et al, in a rural tertiary care hospital, among the 120 study participants in the age group of 21 to 30 years, 80% of them were aware of menstrual cup (10).

Among them 36.7% of the participants got information from media, 26.7% from family, 20.8% from friends, and 14.2% from medical personnel. Majority of the participants were either undergraduates (35%) or post-graduates (25.8%). The main concern about the menstrual cup was found to be fear of leakage (51.7%), followed by discomfort (26.7%). 65% of the participants said if a menstrual cup is made available, they are willing to use it (13). In this study, among the 350 participants, 93.4% knew about menstrual cup. About source of information 76.6% got information from social media, 37.4% from friends, 13.7% from medical personal, 8% from family, 0.9% from other sources. Half of the participants were undergraduates and 37% were either graduate or postgraduate. This study showed that 47.4% was afraid of insertion of cup, 19.1% had lack of knowledge and 9% avoided the use due to cultural beliefs. Among the respondents 49.1% are willing to use if it is made available. Most of the participants (93.4%) knew what menstrual cup was and more than half of the participants (84%) considered it as a safe device.

In a systematic review and meta-analysis by Anna Maria van Ejik and Penelope Phillips among the 436 records identified, 43 studies were eligible for analysis (3319 participants) (3). Most studies reported on vaginal cups [63%], five [12%] on cervical cups and 11 [25%] on mixed types of cups or unknown. The studies reported that the problem of leakage with menstrual cup was either same or in the lower side when compared to disposable pads or tampons. The adoption of menstrual cup required a familiarization phase over several menstrual cycles and peer support. In 13 studies, 73% of participants, wished to continue

the use of menstrual cup at study completion. Use of the menstrual cup showed no adverse effects on the vaginal flora. Even though rare, a few cases of severe vaginal pain, allergy, urinary tract infection complicated with hydronephrosis, toxic shock syndrome and dislodgement of intrauterine device were reported (11).

A study conducted by Maryam Gharacheh et al , observed that the mean score of the overall satisfaction with the cup was  $6.54 \pm 0.76$ , and the leakage had the lowest mean score among the satisfaction items ( $5.25 \pm 1.63$ ) (12). About 83% of participants reported experiencing menstrual cup leakage. In this study vaginal discomfort and leakage were the major concerns reported by menstrual cup users. Among the reported health risks, the highest mean score was for vaginal pain during removal (23.9%). Most participants (83.9%) were familiar with the cup via social networks and 98.6% recommended this product to other women.

In this study, young age, educational status, socio-economic status and marital status of females in the reproductive age group and knowledge about menstrual cup. In regression analysis age was found to be confounder. Young females, mostly unmarried will have increased exposure to social media and hence more knowledge regarding menstrual cup. Education, occupation, and socio-economic status are more or less related and investment in education will definitely improve the knowledge levels on menstrual hygiene practices. Other factors like availability of cups, water supply and cost effectiveness plays a major role in the selection of products especially in rural communities (7).

## Conclusion

Most of the participants (93.4%) were aware of menstrual cup. Even though two third of the participants had good knowledge regarding menstrual

cup, only 15.1% have tried to use menstrual cup. Fear of insertion was the most common concern for not trying menstrual cup. Among the respondents 49.1% are willing to use if it is made available and 84% considered it as a safe device. Discomfort and leakage were the most important problems reported by participants. Younger age and higher educational qualification were found to be independently associated with knowledge levels regarding menstrual cup. Even though there is adequate knowledge regarding menstrual cup, the proportion of females using it is very less. This shows the need for making menstrual cups freely available and bringing a behavior change among females of reproductive age group in Kerala.

### Conflict of Interests

Authors have no conflict of interests.

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