



## **Knowledge, acceptability and use of menstrual cup among female police trainees, Kerala, South India.**

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### **ABSTRACT**

*The aim of the present study was to understand the knowledge, acceptability and use of menstrual cup among female trainee police officers. Data was collected from 385 eligible participants, using a descriptive, quantitative, cross-sectional survey approach, recruited conveniently from the state of Kerala, South India. Analysis was done using SPSS version 27.0 using descriptive statistics. Results showed that though 83.64 % (322) of the study participants had heard about menstrual cups, only 15.6% (60) of the participants reported that they have ever tried menstrual cups. Only 12.2% (47) of the study participants were using the cups regularly and the remaining 87.8% (338) were using sanitary napkins. Only 22.6% (87) of the participants felt that they have adequate knowledge regarding menstrual cups. More than half [57% (223)] of the participants were not sure about the safety aspects of cups while 38.7% (149) and 3.4% (13) reported it to be safe and unsafe respectively. Of all, 64.4%(248) reported limited knowledge, 24.4%(94), discomfort, leakage 9.1%(35), and possible allergy 2.1 % (8) as major concerns for using the cups. The knowledge, and acceptability towards menstrual cups is found to be poor and the use of cups was found to be very limited. The study highlights the need to raise the awareness and provide support and counseling services to promote the safe and effective use of menstrual cups to have a positive menstrual experience for women.*

**Keywords:** Menstrual hygiene, Menstrual cup, Knowledge, Attitude, Women, Reproductive age

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### **INTRODUCTION**

Globally, an estimated 1.9 billion people menstruate every month, spending on average 65 days in the year dealing with menstrual blood flow [1]. Menstrual health and hygiene are an integral component to ensure that they lead healthy and productive lives. But millions of these girls, women, transgender men and non-binary persons may face personal, familial, cultural, socio economic and religious norms and restrictions and are unable to manage their menstrual cycle in a dignified, healthy way. They face many difficulties and challenges to manage and maintain menstrual hygiene during this time at home, schools, and work places [2]. Managing and maintaining menstrual hygiene and health (MHH) is a crucial factor to ensure the health and wellbeing of these people.

Menstrual hygiene and health encompasses both menstrual hygiene management and the factors that link menstruation including accurate and timely knowledge, available, safe, and affordable materials, informed and comfortable professionals, referral and access to health services, sanitation and washing facilities, positive social norms, safe and hygienic disposal and advocacy and policy [3]. All over the world, people use different solutions to manage menstruation that vary based on the region, personal preferences, availability of resources, socio-economic status, traditions, culture, and knowledge [8]. Lack of access to knowledge and information, safe and effective menstrual absorbents can significantly affect the health and wellbeing of these people. It also stops them from reaching their full potential when they miss out on opportunities crucial to their growth. Poor menstrual hygiene can pose physical health risks and has been linked to reproductive and urinary tract infections as well [4].

In the recent years menstrual cup has gained attention as an alternative to sanitary napkins. This product is flexible and reusable, made of silicone and used to collect menstrual blood vaginally. A recent meta analysis indicated that menstrual cups are a safe option for menstruation management and are being used internationally [2]. But we have limited data from the low and middle income countries. Menstrual cups can protect the environment by preventing from discarding millions of sanitary pads and tampons and improve the quality of life of women, especially athletes and working women, due to longer protection periods, leakage prevention, compatibility with activity and limiting the risk of toxic shock syndrome [5].

Menstrual aged girls and women (~12 to 49 years) represent a significant and growing portion of the 1.2 billion women employed globally [2]. The MHM challenges faced by working women in LMIC are compounded by the nature of their work including those who are working in the law enforcements. Law enforcement is considered as a male dominated occupation globally. Though the number of women in the Indian police increased 90% in six years to 2018, the figures are still small. Between 2017 and 2018, this figure rose 9.5% to 185,696. In Kerala, women's strength in the police force, including armed police, increased 42% in six years to 2018. Between 2017 and 2018, this figure rose nearly 10% to 4,304 [3]. As a group, these women might face disproportionate challenges because of the long and strenuous working conditions. Given the importance of improving the menstrual management among women working in police department, Kerala, this study was aimed to determine the knowledge, acceptability and experiences regarding menstrual cups among woman police officers.

## MATERIAL AND METHODS

This quantitative cross-sectional descriptive survey was conducted from March to October 2021. The target population included all the woman trainee police officers, Kerala, South India. The data was collected from all the eligible participants based on inclusion and exclusion criteria. All the women between the ages of 18 and 45 years with regular menstrual periods, enrolled as trainee police officers under the police department, Kerala and willing to participate in the study were included in this study. Those who already had the menopause were excluded.

Permission and approval to conduct the study was obtained from all the applicable authorities and relevant committees. After providing complete information regarding the study, an informed written consent was obtained from all the participants prior to the data collection. Since there is no standard questionnaire available, the study instrument was developed after reviewing the literature [6, 9, 10] and in consultation with field experts. The research utilized google forms to collect the data. The final version of data collection instrument had four sections; Section 1 - profile of participants, Section 2 - questions related to the use of mensural cups, section 3 - multiple choice questions to test the knowledge regarding the use menstrual cups and section 4 - 5 point Likert scale (strongly disagree to strongly agree) to assess the acceptability towards the menstrual cups.

After ensuring the content validity and reliability, a web based link was created using the google forms to collect the data. The link for the participant information sheet, consent form and questionnaire were send to all the eligible participants through their emails. Anonymity and confidentiality was assured for the participants. All the completed questionnaires were reviewed for accuracy, entered and cleaned using Microsoft Excel 2016. Descriptive analysis was done using SPSS Version 27 by calculating the frequency and percentage.

## RESULTS

A total of 385 woman police officers completed the survey. The Profile of participants is given in Table 1.

**Table 1: Profile of study participants**

Characteristics	Frequency	Percentage
<b>Age (years)</b>		
≤ 20	2	0.5
21-30	288	74.8
31-40	94	24.4
41-45	1	0.3
<b>Level of Education</b>		
Undergraduate	99	25.7
Post graduate	154	40.0
Professional	68	17.7
Others	64	16.6
<b>Place of Residence</b>		
Urban	44	11.4
Semi -urban	72	18.7
Rural	269	69.9

Though 83.64 % (322) of the study participant had heard about menstrual cups, only 15.6% (60) of the participants reported that they have ever tried menstrual cups. The knowledge regarding menstrual cup (Table 2) was found to be poor among study participants, and when asked to rate their knowledge 22.6% (87) of the participants reported that they have adequate knowledge regarding menstrual cups.

**Table 2: Knowledge regarding menstrual cup among female police trainees**

Sl.No	Items	Frequency	Percentage
1.	<b>What is a menstrual cup made of?</b>		
	Silicon	108	28.1
	Rubber	32	8.3
	Latex	10	2.6
	All of the above	19	4.9
	I don't know	216	56.1
2.	<b>Is menstrual cup a safe device?</b>		
	Yes	149	38.7
	No	13	3.4
	I don't know	223	57.9
3.	<b>What is the mechanism of action of menstrual cup?</b>		
	Collection	262	68.1
	Absorption	12	3.1
	I don't know	111	28.8
4.	<b>How often a mensural cup should be Emptied?</b>		
	1-2 hourly	4	1.0
	6-12 hourly	192	49.9
	I don't know	189	49.1
5.	<b>How can we sterilize/clean menstrual cup?</b>		
	Washing with water	31	8.1
	Boiling	217	56.4
	Using microwave	0	0
	All of the above	0	0
	I don't know	137	35.6
6.	<b>Can we use the cup during postpartum period? (&lt; 6 weeks of delivery)</b>		
	Yes	19	4.9
	No	8	2.1
	I don't know	358	93.0
7.	<b>Can it be used in virgins?</b>		
	Yes	146	37.9
	No	11	2.9
	I don't know	228	59.2
8.	<b>Can menstrual cup be used while swimming and bathing?</b>		
	Yes	143	37.1
	No	4	1.0
	I don't know	238	61.8

Out of all 87.8% (338) of the participants were using sanitary pads while 12.2%(47) of the participants were using menstrual cups regularly for sanitary protection and 64.4%(248) reported limited knowledge, 24.4%(94), discomfort, leakage 9.1%(35), and possible allergy 2.1 % (8) as major concerns for using the cups. More than half [57% (223)] of the participants were not sure about the safety aspects of cups while 38.7% (149) and 3.4% (13) reported it to be safe and unsafe respectively. Regarding the acceptability towards menstrual cups (Table 3), less than 50% of the population agreed that it is comfortable and easy to adapt. But 79.5% (306) of the participants agreed that it is environmental friendly.

The limited use of menstrual cups compared to sanitary napkins were reported by Meghana S et al among rural women [5] and Babu S et al among nurses [12], Ballal KS et al among reproductive women [15]. This could be possibility due to the lack of awareness, low popularity and lack availability [12, 13]. Study conducted by Babu S et al found that confusions regarding the leaking, concern regarding discomfort, pain, non-suitability for heavy load work, and lack of knowledge among study participants [16]. Meghana S et al reported leakage (51.7%), followed by discomfort (26.7%), limited knowledge (15%), and allergies (6.7%) among reproductive woman from rural area [9].

In contrary, findings from a clinical trial conducted in South Africa, among woman aged 18-45 years with regular menstrual cycles by Beksinska ME et al. showed that compared to pads/ tampons (usual products), the menstrual cup was rated better for comfort, quality, menstrual blood collection, appearance, and preference [6]. Recent systematic review and meta-analysis conducted by Van Eijket al taking menstrual blood leakage while using the menstrual cup as the primary outcome, found that leakage was similar or lower for menstrual cups compared with the other devices used for maintenance of menstrual hygiene in women. They recommended menstrual cups as an acceptable and safe option for menstrual hygiene in high-income, low-income, and middle-income countries though they are not popular [19].

Most of the study participants 53.5% (206) were willing to pay 200-500 INR for a menstrual cup yearly while the remaining 35.8(138) and 10.6(41) were willing to pay more than 500 INR and less than 200 INR respectively. Similar to the findings of the present study, Meghana S et al among women in the reproductive age found that 50% of the participants were ready to pay Rs. 200-500 for the cup [19]. Higher cost and poor availability of mensural cups are reported as a common disadvantage to use is also reported among reproductive woman by Ballal SK et al [11].

Only 12.2% (47) of the study participants were using the cups regularly and the remaining 87.8% (338) were using sanitary napkins. But 41.3% (159) reported that they will recommend the menstrual cup to others, and 21.6 % (83) reported that the use of menstrual cup is easy. It could be because the adoption of menstrual cup needs a familiarization phase during several menstrual cycles, and peer support can improve uptake rate. Low awareness and knowledge regarding menstrual cups were reported by Ali SA et al [16] and Meghana S et al [9] and while acceptable level of awareness was reported by Ballal KS et al [11] and Divakar H et al [17] among Indian women. Menstrual cups can be considered as an alternative to disposable sanitary products, even where water and sanitation facilities are poor. Though they are reusable, and easy to clean, reports suggested lack of education and awareness in the providers as well as consumers as primary reasons for women not convincingly using menstrual cups [18, 19].

**Table 3: Acceptability of menstrual cups among female police trainees**

Sl No	Items	Median	Agree% (f)	Neutral % (f)	Disagree % (f)
1.	It is comfortable	3	46.5 (179)	48.6(187)	4.9(19)
2.	More hygienic	1	63.9(246)	34(131)	2.1(8)
3.	Environmentally friendly	1	79.5(306)	17.9(69)	2.6(10)
4.	More Economical/Cheaper	1	66(254)	29.6(114)	4.4(17)
5.	Easy to adapt	3	49.4(190)	42.3(163)	8.3(32)
6.	Low probability of leakage	1	54.3(209)	40.8(163)	4.9(19)
7.	Durable	1	67.5(260)	31.9(123)	0.5(2)

To our knowledge, this is the first study which explored the knowledge, acceptability and use of this product among woman police officers in South India. Most of the participants were highly educated, and all were employed, limiting the generalizability of the results to the society.

The researcher had limited time, funding and other resources for conducting the study. The present study utilized a quantitative survey approach. A mixed-methods design involving in-depth interviews can provide useful insights to the dynamics of use of this product. A cohort study can also be planned to understand the facilitators, barriers, best practices safety outcomes and adverse effects of using cup among the population of interest.

## CONCLUSION

Our findings reveals that the knowledge, acceptability and use of this product is limited among woman police officers. Hence the study recommends targeted education and counselling activities to increase the awareness, and acceptability while ensuring the availability of the cups to larger population of women who are unaware of it. Extending continued support and counselling sessions regarding menstrual cups can make a long way to ensure working woman successfully, comfortably and safely use menstrual cups to have good menstrual hygiene and positive menstrual experience.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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