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## Original Research Article

## Assess the usage pattern of menstrual cups and its determinants among young health professionals at a tertiary hospital in Puducherry

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## ABSTRACT

**Background:** Menstrual cups are a better alternative for menstrual hygiene but usage among girls and women is limited due to lack of popularity. The purpose of this study is to assess the usage of menstrual cup and its determinants among young women in health profession.

**Materials and Methods:** This is a cross-sectional analytical study designed to collect data among 370 young women who fulfilled the selection criteria using a cluster sampling method. The objectives of the study were assessed with a self-administered questionnaire. The data were analyzed using descriptive (frequency, percentage, mean, and standard deviation) and inferential statistics (chi-square). All statistical analysis was carried out at a 5% level of significance.

**Results:** Among 370 young women only 29 (7.8%) use a menstrual cup, nearly 90% of them use it because it is comfortable, non-allergic, convenient during travel, and enables free movement. Only 8 (2.2%) have used it earlier but not presently, about 75% of them stopped because of difficulty in insertion. While 333 (90%) of young women have never used a menstrual cup, about 70% presumed menstrual cup insertion would be difficult and uncomfortable.

**Conclusion:** Young women despite being in the health profession and knowing about menstrual cups do not use them. This highlights the need for efforts to promote awareness regarding the availability and utilization of menstrual cups to empower girls and women in maintaining menstrual hygiene.

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## 1. Introduction

Women constitute half of the world's population. They play several different roles both in family and society, thereby necessitating attention to women's health. The menstrual cycle is a normal physiological process in the reproductive period of a woman's life. All over the world girls and women choose varied menstrual products considering their cost, level of comfort, traditional practices, and availability.<sup>1</sup> Important aspects of maintaining menstrual hygiene require the products to be leakage-proof and odorless but the non-availability of such effective products

makes the women apprehensive.<sup>2</sup> Exploring the availability of different sanitary products and the variety in each type of product helps women relieve their distress.

Menstrual cups are made of silicone and flexible thereby reusable. These are available worldwide and are an effective alternative product to collect menstrual blood and enhance menstrual hygiene practices.<sup>3</sup> Unlike sanitary pads or tampons menstrual cup need not to be discarded so this eco-friendly aspect is well-received among the women.<sup>4</sup> Menstrual cup provides leak-proof, hassle-free hygiene maintenance and thus relieve stress, especially for working busy thereby improving their quality of life.<sup>5</sup>

According to the findings from the Fifth National Family Health Survey, the menstrual products used are sanitary

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pads by 64.4%, cloth by 49.6%, 15% use home-made napkins, and menstrual cups by 0.3% of women aged 15-24 years. Studies have reported that menstrual cup users required awareness and familiarization with the product.<sup>6</sup> A study conducted in Karnataka reported that nearly 82% of study participants had good awareness of menstrual cup but only 2.6% have used it.<sup>7</sup> In another study, insertion and initial use of the cup were reported as challenging and uncomfortable by 23% of women. However, after using it regularly, over 90% of women found the menstrual cup to be convenient and recommended it to others. Evidence shows that women prefer menstrual cup over sanitary pads owing to convenience, portability, ease of storage, greater freedom, need of lesser water resource.<sup>8,9</sup>

Several studies have been carried out on adolescent school girls, examining their menstrual hygiene practices.<sup>5,6,10-12</sup> Notably, studies conducted among Indian women have primarily focused on the acceptability rather than the actual usage of menstrual cups among young women.<sup>1-3,13</sup> This present study specifically targeted young women in the health profession, with an aim to provide insights into the factors that influence their choice of menstrual products. This understanding can be translated into awareness programs and improve menstrual hygiene among young women.

## 2. Materials and Methods

The study was conducted in JIPMER (tertiary hospital) Puducherry, over a period of 6 months. It was a cross-sectional, analytical study. Using cluster sampling technique 370 young women were selected. The inclusion criteria were young women who are aged between 18-24 years and able to read and write English.

The data was collected using a self-administered questionnaire prepared by the researcher and validated by experts. This consisted of part 1 section -A, the socio-demographic profile of the young women such as age, course of study, year of study, religion, marital status, residence, and source of information. Section -B included their menstrual profile such as regularity of menstrual cycle, duration of the menstrual cycle, gynaecological issues, and type of sanitary product used. The second part had questions on menstrual cup usage, which included factors for the use or non-use of menstrual cups.

Statistical test: The data were analysed using the SPSS version 21. The categorical variables such as residence, family history, regularity of menstrual cycle, menstrual flow, gynaecological issues, and pattern of menstrual cup use, etc. was expressed as frequency and percentage. The continuous variables – age, and duration of the cycle was expressed in mean and standard deviation. Association between categorical variables of socio-demographic, menstrual, and personal factors with the usage of menstrual cup use was tested by the Chi-square test.

## 3. Results

The sample size for the final analysis comprised 370 young women.

**Table 1:** Distribution of the young women on their sociodemographic profile (N= 370)

Variables	Categories	Frequency n (%)
Course of study	Allied	54 (14.6)
	Medical	93 (25.1)
	Nursing	223 (60.3)
Year	First	138 (37.3)
	Second	98(26.5)
	Third	106 (28.6)
	Fourth	28 (7.6)
Marital status	Married	5 (1.4)
	Unmarried	365 (98.6)
Religion	Hindu	269 (72.7)
	Christian	47 (12.7)
	Muslim	49 (13.2)
	Buddhist	2 (0.5)
	Sikh	1 (0.3)
	Atheist	2 (0.5)
Residence	Rural	78 (21.1)
	Urban	292 (78.9)
Source of information	Family	18 (4.9)
	Friends	91 (24.6)
	Media	254 (68.7)
	Seminar	2 (0.6)
	Magazine	3 (0.8)
	Awareness program	2 (0.5)

Table 1 shows that among the 370 young women, most of them 233 (60.3%) were pursuing nursing. Regarding year of the study, same proportion of young women were studying in second 98 (26.5%) and third year 106 (28.6%) while a slightly higher proportion in the first year 138 (37.3%). Most of the young women are Hindu 269 (72.7%) and unmarried 365 (98.6%). The Majority of them reside in urban 292 (78.9%) areas. The source of information about menstrual cups for most young women 254 (68.7%) was media, followed by friends 91 (24.6%).

The mean age of the young women was 20 ( $\pm 1.44$ ) years, with their age ranging from 18-23 years.

Table 2 shows the menstrual profile of 370 young women, where majority of them 321 (86.8%) have regular menstrual cycles. Most young women 345 (93.2%) have no significant gynaecological issues. The sanitary product used by majority of young women 341 (92.2%) was sanitary pads.

**Table 2:** Distribution of the young women based on their menstrual profile (N= 370)

Variables	Categories	Frequency N (%)
<b>Regularity of menstrual cycle</b>	Irregular	48 (13)
	Regular	321 (86.8)
<b>Gynaecological issue</b>	Severe cramps	2 (0.5)
	dysmenorrhea	2 (0.5)
	PCOD	19 (5.1)
	Ovarian cyst	1(0.3)
<b>Sanitary products</b>	Nothing significant	345 (93.2)
	Menstrual cup	29 (7.8)
	Sanitary pad	341 (92.2)

The mean duration of menstrual cycle was 5 days ( $\pm 1.16$ ) among the young women.

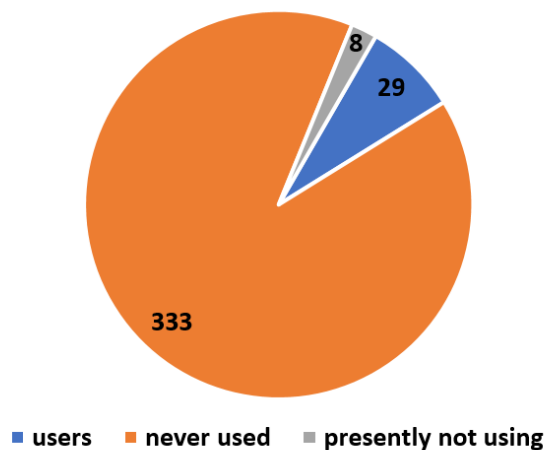
**Figure 1:** Distribution of young women based on the usage of menstrual cup

Figure 1 depicts that only 29 (7.8%) of the young women used a menstrual cup and the majority of them 333 (90%) have never used it.

Among the 29 (7.8%) menstrual cup users, nearly 90% of young women used it because it is comfortable to use, non-allergic, convenient during travel, and enabled free movement. Whereas about 80% of them used it because it is eco-friendly, affordable, leakage-proof, and better for maintaining menstrual hygiene. About 75.6% use a menstrual cup as it is easily available and 51.7% easy to insert.

Out of the 370 young women, only 8 (2.2%) are not presently using menstrual cup due to more than one reasons. Six young women had difficulty in insertion and five felt uncomfortable. Non-availability of appropriate size of menstrual cup and pain was the reason behind stopping the use among three young women. Only two young women felt

it was costly, and one was affected by infection and allergies.

Among the 333 (90%) of young women who had never used menstrual cups, nearly 70% young women thought menstrual cup insertion would be difficult and uncomfortable. About 43.5% were doubtful about the availability of appropriate size of menstrual cups and 52.3% feared it would cause pain. Below 30% of young women felt it would lead to infection, allergies, and injury. Only 19% felt it is costly and not easily available.

Table 3 shows a highly significant association between the pattern of menstrual cup use only with the year of study at  $p < 0.001$ .

#### 4. Discussion

The mean age of the young women was 20 ( $\pm 1.44$ ) years, with their age ranging from 18-23 years. Most of them 233 (60.3%) are pursuing nursing, and about one-third of the young women, 138 (37.3%) were studying in their first year. Although the present study was conducted among undergraduates, there were 5 (1.4%) of them married. Most of the young women 269 (72.7%) followed Hindu religion. More than half of the young women 292 (78.9%) belongs to urban residency. The source of information about menstrual cup for most young women 254 (68.7%) was media, followed by friends 91 (24.6%).

The current study showed that only 29 (7.8%) out of 370 young women in the health profession use a menstrual cup, nearly 90% of them use a menstrual cup because it is comfortable to use, non-allergic, convenient during travel, and enables free movement. This finding is much higher than that of a study done in Karnataka in 2020 among health professionals where only 2.6% of women used a menstrual cup.<sup>7</sup> While a study conducted in Kerala in 2022 among 350 females in the general population found a higher proportion, 15.1%, of them using menstrual cups, the reason could be that the female literacy rate in Kerala is 95.2%.<sup>14</sup> About 80% of the users in this study use it because it is eco-friendly, affordable, leakage-proof, and better for maintaining menstrual hygiene. A group of women in a study in Mumbai expressed similar aspects of affordability and reduction in waste compared to sanitary pads for their preference for menstrual cup.<sup>15</sup>

Among the 333 young women who have never used a menstrual cup, about 70% felt menstrual cup insertion would be difficult and uncomfortable, while in 56.2% of them, fear of insertion was the reason for not trying a menstrual cup. The disparity in the prevalence of menstrual cup usage and its determinants among young women can be attributed to several factors, such as the study's context, the size of the population studied, sociodemographic characteristics, and the greater accessibility and acceptance of sanitary pads when compared to menstrual cups among young women. The provision of free sanitary napkins at primary health care centers through adolescent clinics could

**Table 3:** Association between categorical variables of socio-demographic, menstrual, and personal factors with the pattern of menstrual cup use (N=370)

Variables	Categories	Sanitary product		Total	p-value
		Menstrual cup	Sanitary pad		
Course of study	Allied	5 (9.3)	49 (90.7)	54	0.061
	Medical	2 (2.2)	91 (97.8)	93	
	Nursing	22 (9.9)	201 (90.1)	223	
Year of study	First	1 (0.7)	137(99.3)	138	0.000
	Second	3 (3.1)	95(96.9)	98	
	Third	23 (21.7)	83 (78.3)	106	
	Fourth	2 (7.1)	26 (92.9)	28	
Marital status	Married	0	5(100)	5	0.511
	Unmarried	29(7.9)	336(92.1)	365	
Religion	Hindu	19 (7.1)	250 (92.9)	269	0.479
	Christian	3 (6.4)	44 (93.6)	47	
	Muslim	7 (14.3)	42 (85.7)	49	
	Buddhist	0	2 (100)	2	
	Sikh	0	1 (100)	1	
	Atheist	0	2 (100)	2	
Residence	Rural	8 (10.3)	70 (89.7)	78	0.371
	Urban	21 (7.2)	271 (92.8)	292	
Source of information	Family	2(11.1)	16 (88.9)	18	0.265
	Friends	8 (8.8)	83 (91.2)	91	
	Media	19 (7.5)	235 (92.5)	254	
	Seminar	0	2 (100)	2	
	Magazine	0	3 (100)	3	
	Awareness program	0	2(100)	2	
Regularity of menstrual cycle	Irregular	1 (2.1)	47(97.9)	48	0.268
	Regular	28 (8.7)	294 (91.3)	322	
Gynaecological issue	Present	26 (7.5)	319 (92.5)	345	0.423

also be a reason for many to not use a menstrual cup.<sup>1,14</sup>

A significant association is seen only between menstrual cup usage and the year of study of young women. Though the source of information was seen greatly due to media (92.5%), peer influence seems to be an important contributing factor to the usage of menstrual cups.

## 5. Conclusion

Though the women belonged to the health profession and had awareness about the menstrual cup they were not using it due to presumed difficulty in insertion, pain, and doubt about the availability of menstrual cups. This emphasizes the need for awareness and frequent reinforcement regarding better menstrual hygiene practices with the help of menstrual cups. These awareness programs can be conducted through adolescent clinics held in the primary health centres and hospitals.

## 6. Ethical Consideration

The study was approved by the Institute Review Board and Institute Ethics Committee (JIP/IEC-OS/138/2023).

## 7. Source of Funding

None.

## 8. Conflict of Interest

None.

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