



Menstrual Cup awareness and acceptance among reproductive age women in an urban area of Andhra Pradesh

Pravallika S¹, Kiranmayi K², Afreen S³, Susmitha KM⁴

ABSTRACT

Background

Menstrual cup is a reusable, cost-effective, user-friendly and environmentally friendly menstrual hygiene management method which can become a sustainable alternative to disposable sanitary pads. But its use is less among women due to lack of awareness and availability. The objective of this study is i) to assess the awareness of menstrual cup among reproductive age women ii) to estimate the proportion of menstrual cup users among the participants and iii) to assess the perception about menstrual cup among users and non-users.

Methods

A descriptive cross-sectional study was done among 260 women in 20-40 years age group from January to April 2023 in an urban area of Nellore district, Andhra Pradesh by applying one stage cluster sampling method. Data was entered and analyzed in Microsoft excel.

Results

The women who were aware of menstrual cup were 102 (39%). The source of information was social media in 62% of those aware. The awareness score was good among 76% of women in medical profession, 15% of housewives are having good score. The awareness score has significant association with women's occupation ($p < 0.004$). The women using the menstrual cup were 4.6% in the study. Age group and marital status of women were significantly associated with usage. The factor that influenced the women to start using menstrual cup was known users among friends, family and colleagues.

Conclusion

The awareness and usage of menstrual cup is less among women. The use of menstrual cup is seen with women above 25 years age group, who were married and having peer support from friends and colleagues. Awareness is not sufficient to use the cup. Peer support and guidance on usage of cup is essential to promote usage among women.

Key words: Menstrual cup, awareness, perception

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INTRODUCTION

Menstruation is a normal body function and is a sign of reproductive health in women. Women should be able to manage menstruation hygienically, safely and with dignity. Menstrual hygiene refers to use of clean material to absorb or collect menstrual blood, ability to change materials in privacy and also to suitably dispose them off and having access to facilities with water and soap.¹

Menstrual Cup is a reusable, safe, eco-friendly and user-friendly method as no waste is produced and cost affordable in long-term use. Menstrual cup is a foldable bell-shaped device made of medical grade silicone that is inserted into the vagina to collect blood during menstruation. The cup has to be emptied every 6-12 hours depending on the menstrual flow and re-inserted after rinsing or washing with water. They are required to be boiled for sterilization after end of each cycle.²

With disposable sanitary pad, nevertheless the menstrual hygiene management among women has improved to a good condition in India, but simultaneously challenge of large amount of non-biodegradable hazardous waste is generated.¹ Sanitary pad disposal is still a privacy concern to women in India which are routinely disposed along with household solid waste.² Studies have shown that sanitary pads and tampons contain chemicals like phthalates, parabens, and bisphenols which act on the vaginal flora causing infections, irritation, rashes, exposure to the risk of cancer, etc.³ The other menstrual methods are with their own limitations like the reusable cloth pad has to be washed and sun-dried each time and the biodegradable sanitary pads are non-affordable because of high-cost.

Women can make informed choice when they are aware of benefits and problems of all the menstrual methods. Menstrual Cup was preferred in place of pad or tampon as a satisfactory and comfortable option among women participants (20-50 years age) in a longitudinal interventional study⁴ done in Gujarat and similar findings were reported in a randomized controlled trial (RCT) in South Africa⁵ and in systematic reviews⁶⁻⁷ on acceptability of reusable Menstrual Cup. Menstrual cup practice is found to be as low as 2-4% in various studies⁸⁻¹⁰ done among urban

women in South India. The practice is lower even among those with good awareness. Studies conducted among medical staff and/or students in Karnataka⁹⁻¹⁰ and Kerala¹¹ reported that 70-90% of women were having good knowledge but lesser usage (3-4%) by the participants. In another study conducted among reproductive age women in Telangana⁸ found 68% of awareness but only 3.7% usage. Despite of having adequate awareness about its advantages many women hesitate to use menstrual cup due to cultural factors as menstruation is still a taboo in some communities. This awareness to practice gap is attributed to lack of popularity for menstrual cup with no known users, lack of motivation and fear of discomfort related with insertion and removal of cup and leakage problem.⁸⁻¹¹ There are limited or no studies conducted among women from general population. With a view to analyse the situation at the community level in our area of Andhrapradesh state, the present study was conducted to assess the awareness and perceptions on menstrual cup and its usage among reproductive age women. This information can be used in planning awareness campaigns on menstrual hygiene methods.

Aim

The aim of the study was to assess the awareness and acceptance of menstrual Cup among reproductive age women in the urban area of Nellore, Andhrapradesh.

Objectives

i) To assess the awareness of menstrual cup among the study participants. ii) To estimate the proportion of menstrual cup users among the participants. Iii) To assess the perception about menstrual cup among users and non-users in the study area.

2. Methodology

Study type & design: A descriptive Cross-sectional study was done among women in the 20-40 years age group selected by multistage random sampling method

Study area: Urban area from Municipal wards of Nellore city.

Study participants: Reproductive age women

Inclusion criteria:

1. Women in the age group of 20-40 years
2. Those who give informed consent

Exclusion criteria:

1. Those not willing to participate in the study
2. Women with gynecological problem precluding cup use

Sample size: $n = 252 \sim 260$. (Calculated by using $n = 4pq/d^2$ where $p = 65\%$, with allowable error = 6 at 5% level of significance.)

Sampling method: The study participants were selected by **multi-stage random** sampling. In the first stage, one ward was randomly selected from the list of 54 wards of the Nellore Municipal Corporation. There are four sub-localities enlisted in the selected ward. In the second stage, one sub-locality (Sujathamma colony) was randomly selected. There are 1172 houses with a total population of 3905, of whom there are 865 women in the 20-40 years age group. The required sample of 260 woman for the study was selected by systematic random sampling method in the third stage. When there are two or more eligible women in the same family, the woman in the higher age group was selected.

Study period: January – April 2023

Data collection and analysis: A pre-structured and pre-tested questionnaire was administered for data collection. Google forms were given to women who can fill the form while oral interview was done for women who are not comfortable with google forms. Knowledge score is assessed by pre-tested set of questions.⁷⁻⁸ Data was entered and analyzed in Microsoft excel sheet. Descriptive statistics like frequencies with percentages were calculated. Chi square test or Fisher's exact test was used to compare proportions.

Results

This study is conducted to assess the awareness and perception towards menstrual cup and its usage among reproductive age woman. Among the study subjects, 35% are in the age group of 31-35 years, 32% are in the 26-30 years followed by 19% of 20-25 years and 14% of 36-40 years age group. Majority of the women are housewives (38%) followed by women employed (35%) in different professions such as IT and bank employees (17%), medical doctors (11%) and nurses (1%), and teachers (8%). Skilled workers are of 9.6%, unskilled workers are 10% and students (non-medical graduate) are 7%. 83% were married.

Awareness

The women who were aware of menstrual cup are 102 (39%) in the study, of whom, 57 (56%) are having good awareness score and 45 (44%) are having poor awareness score. The common source of information on menstrual cup is social media (62%) followed by friends and family (31%), colleagues at work place (7%).

The awareness score was good among 25.6% of women in the 26-30 years and 25% of 31-35 years age group compared to 14.3% in 20-25 years and 16.2% in 36-40 years age group women. The difference is not statistically significant ($p = 0.15$). There is no significant difference found with marital status of women (married 20.9% vs unmarried 26.7%; $p = 0.34$). The awareness was significantly associated with women's occupation ($p < 0.0004$). While 76% of women in medical profession are having good awareness score, 32% of graduate students, 20% of employees and 15% of housewives are having good awareness.

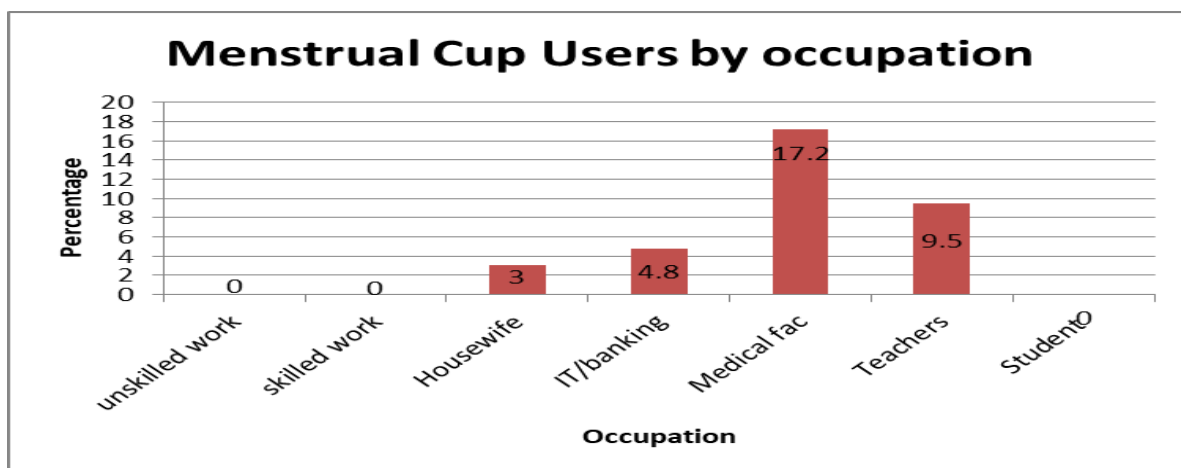


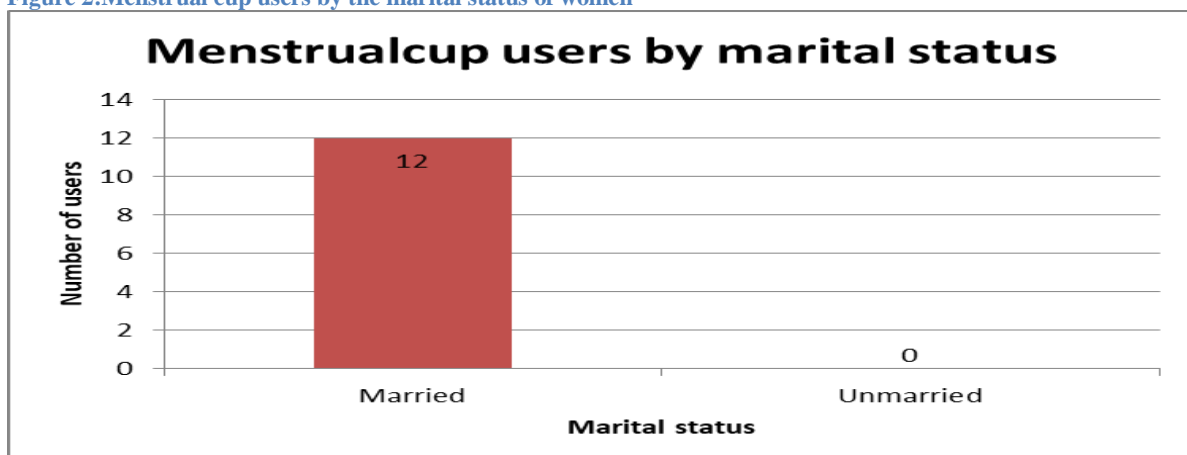
Figure 1: Menstrual cup users by occupation of women

Table 1: Awareness of Menstrual Cup by Socio-demographic characteristics of subjects

Variable	Not aware (158)	Poor awareness (45)	Good awareness (57)	Total (percentage)	p Value*
Age group					
20-25	31 (63.3)	11 (22.4)	7 (14.3)	49 (18.8)	p = 0.156; NS
26-30	54 (65.8)	7 (8.5)	21 (25.6)	82 (31.5)	
31-35	51 (55.4)	18 (19.6)	23 (25)	92 (35.4)	
36-40	22 (59.5)	9 (24.3)	6 (16.2)	37 (14.3)	
Occupation					
Home maker	72 (73.5)	11 (11.2)	15 (15.3)	98 (37.7)	P<0.0004 S
Medical professional	2 (6.9)	5 (17.2)	22 (75.9)	29 (11)	
IT & banking	20 (47.6)	13 (30.9)	9 (21.4)	42 (16.1)	
Teachers	12 (57)	5 (24)	4 (19)	21 (8)	
Student	4 (21)	9 (47.4)	6 (31.6)	19 (7.3)	
Unskilled & semiskilled	26 (100)	0	0	26 (10)	
Skilled workers	22 (88)	2 (8)	1 (4)	25 (9.6)	
Marital status					
Married	135 (62.8)	35 (16.3)	45 (20.9)	215 (82.7)	p=0.34; NS
Unmarried	23 (51.1)	10 (22.2)	12 (26.7)	45 (17.3)	

*Chi-square / Fisher's exact test is calculated.

Figure 2: Menstrual cup users by the marital status of women



Perception

Regarding the safety to use, 66% of women agreed to that the menstrual cup is safe to use. While 65% of women opined the menstrual cup as the user-friendly and eco-friendly method, 20% women choose sanitary pads method and 8% of women choose reusable cloth for that question. Other 5% women mentioned as don't know. While 46% feel using menstrual cup would be comfortable, 42% of women feel it would be

uncomfortable. The common reason for not switching to menstrual cup among the women even after knowing its advantages is fear of leakage (46%), followed by discomfort (40%) need of insertion into vagina (36%), non-availability in the market (16%), risk of infection (7%). Willingness to switch to menstrual cup is shown by 45% of women.

Table 2: Perception of Menstrual Cup among women

Women aware about menstrual cup	Number of subjects	Percentage (95% CI)
	102	39.2 (33.1-45.3)
Safe to use?		
Yes	66	64.7 (55.2-74.2)
No	12	11.8 (5.4-18.2)
Don't know	24	23.5 (15.1-31.9)
User-friendly and Eco-friendly method?		
Menstrual cup	66	64.7 (55.2-74.2)
Sanitary pad/ tampon	20	19.6 (11.7-27.5)
Reusable cloth	8	7.8 (2.5-13.1)
Don't know	5	4.9 (0.6-9.2)
Comfortable to use?		
Comfortable	47	46.0 (36.2-55.8)
Uncomfortable	43	42.0 (32.3-51.7)
Not sure/don't know	12	11.7 (5.6-18.4)
Reasons for not using m cup*		
Leakage fear	47	46.0 (36.2-55.8)
Discomfort	41	40.2 (30.5-49.9)
Difficult to insert	37	36.3 (26.8-45.8)
No known users/ not aware	16	15.7 (8.5-22.9)
Fear of infections	7	6.9 (1.9-11.9)
Willingness to use?		
Interested	44	43.1 (36.8-49.4)
Not-interested	58	56.8 (47.0-66.6)

*Multiple responses

Usage

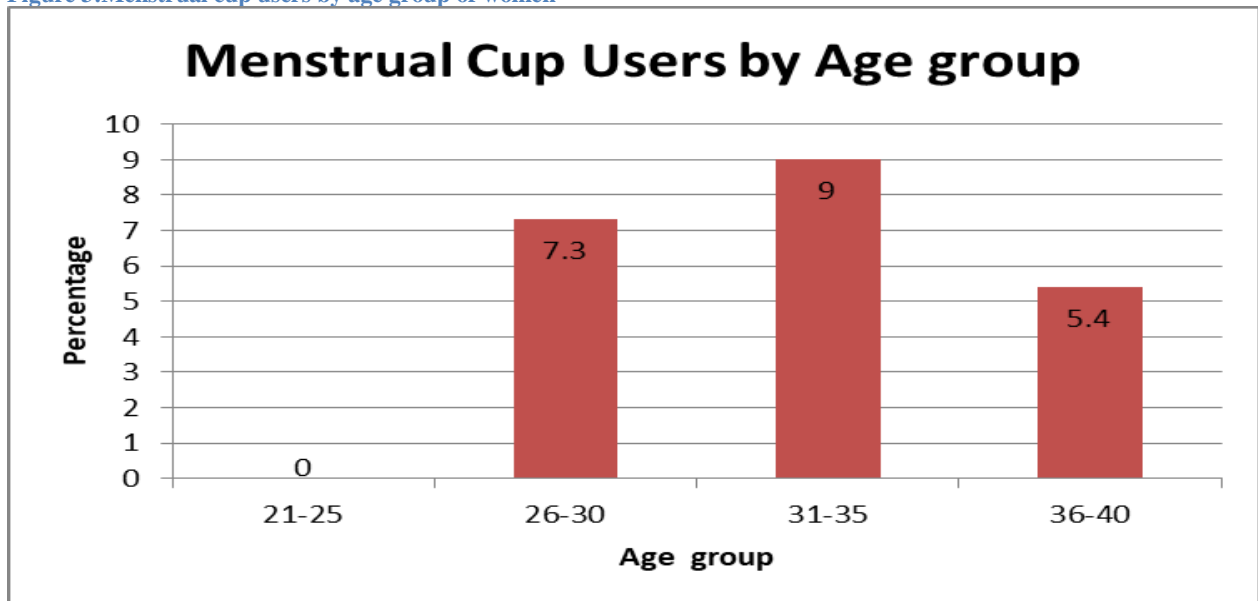
The women using the menstrual cup for at-least two menstrual cycles in this study was 4.6% (12 among 260 subjects). Majority of women (95%) use disposable sanitary pad as the method during menstruation. Among the menstrual cup users, majority in the age group of 26-35 years and all are married. By occupation, 5 are medical faculty, 3 are housewives, 2 are IT employees and 2 teachers. Majority of the users (11) mentioned

having a known user among friends and family or colleagues motivated them to start using the menstrual cup. While 42% of the menstrual cup users were comfortable to use the menstrual cup, the other users mentioned the issues of leakage (33%), difficulty in insertion (25%) and discomfort (8%). Reusable cloth or sanitary pad is used along with menstrual cup as precaution from unexpected leakage by two users.

Table 1: Menstrual cup usage among subjects

Menstrual method practice	Number of subjects	Percentage (95% CI)
Disposable sanitary pads	242	93.0 (89.8-96.2)
Menstrual cup	12	4.6 (2.3-6.9)
Reusable cloth	6	2.3 (0.5- 4.1)
Challenges among users*		
No problem	5	41.6 (13.4-69.8)
Leakage	4	33.3 (6.1-60.5)
Difficulty to insert	3	25.0 (0.3-47.3)
Discomfort	1	8.2 (-7.6 - 24)

Figure 3: Menstrual cup users by age group of women



DISCUSSION

This study to assess the awareness, perception and usage of menstrual cup among reproductive age women is conducted in an urban area of Nellore city. The majority of the study participants (67%) are in the 26-35 years age group and majority are housewives (35%) followed by women in different professions (35%) and unskilled workers (10%).

In this study, 39% were aware of menstrual cup and 22% are having good knowledge about menstrual cup. More than half of women (61%) have not heard of menstrual cup. whereas a study conducted in Karnataka has reported 80% of subjects were aware and 65.7% had good knowledge about the menstrual cup.⁹ The higher awareness is because the study was conducted among medical faculty and students, while the present study was done in the general population. 76% of medical professionals (n=29)

have good knowledge about menstrual cup in this study, which is comparable to that.

In this study, 66% of women agree that the menstrual cup is safe to use and eco-friendly method. Around 45% of women are willing to use menstrual cup during menstrual days. The similar finding is reported in study done by Rani AA et al⁸ and Karnataka studies.⁹⁻¹⁰ The main concern for use of menstrual cup was found to be fear of leakage (46%), difficult to insert and discomfort. Similar results were reported in Meghana S et al study¹⁰ and study done at Apollo, Hyderabad.⁸

Women who used the menstrual cup for at-least two menstrual cycles were 4.6% in this study, whereas 3.7% used in a study done by Rani AA et al⁸ and 2.7% of women used in study done among medical faculty in Karnataka.⁹ None of the study subjects have used in another study.¹⁰ Peer support from friends or colleagues was reported

among the users (94%) in the present study. Disposable sanitary pad is the method for menstrual hygiene management in 95% of women in this study which is similar to other Indian studies.⁸⁻¹²

The women in the 26-35 years age group were more acceptable to use the cup. The acceptance among unmarried women is less compared to married women. The use of menstrual cup by young unmarried women is a matter of debate as tight vaginal muscle tone makes cup insertion difficult and the low usage may be attributed to concerns about virginity and breaking the hymen which is not acceptable from psychosocial context in Indian families.¹³

In this study, 42% of users were comfortable with the menstrual cup. A longitudinal study done in Gujarat among 20-50 years of age women demonstrated that the menstrual cup is preferred (80%) for its comfort, dryness and less odor, easy insertion and removal.⁴ Similarly Singh R et al¹⁴ and Ballal SK et al⁹ reported higher comfort among cup users than with pad. Few users (33%) reported leakage as the problem faced while others had difficulty in insertion. There is no issue of leakage, difficulty vaginal insertion or allergies among users as reported in Rani AA et al study.⁸ Easy insertion was reported by only 37% of users in the study done in Karnataka.⁹

CONCLUSION

This study was conducted among reproductive age women of 20-40 years age group selected by multistage random sampling method, in an urban area of Nellore city to assess the awareness, perception and usage of menstrual cup. The study conclusion is that the awareness on menstrual cup is low among women in this

area and acceptance to use the menstrual cup is very less. Among the women who aware of menstrual cup, the main factors that affect the acceptance are mainly fear of insertion, leakage and discomfort related to use and lack of known users. Majority of the cup users were having a known user from their peer group or family. Among the users, challenges of leakage, difficulty insertion were noted. Longitudinal studies demonstrated that these challenges were faced in initial cycles among the participants and with regular training and guidance these were overcome. This survey also revealed that the many participants are willing to use the menstrual cup if they can get the guidance and peer support. In developing countries like India, there is an inadequate solid waste management, thus there is a need to promote the use of reusable menstrual cup. The menstrual cup appears to be a comfortable and efficient option for menstrual hygiene management in India. Focused group discussions are useful to change the perception of women, to clarify the misconceptions related to use of menstrual cup and to guide the proper use. As this is a cross sectional study and only a few users of menstrual cup were found, the challenges associated with usage of menstrual cup cannot be assessed. Further long-term prospective studies and randomized controlled studies are needed in order to determine the feasibility and acceptability of the cup and to evaluate pros and cons of the menstrual cup usage.

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