



Study on knowledge, attitude and practice regarding menstrual cup among reproductive age women in a rural area of Malappuram district, Kerala

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ABSTRACT

Background and Objectives

In recent years, the menstrual cup has emerged as a promising alternative to traditional menstrual products, offering numerous benefits such as eco-friendliness, cost effectiveness, and improved comfort. This research aims to study the knowledge, attitude and practice regarding menstrual cup among reproductive age women in a rural area of Malappuram district, Kerala.

Methods

A community based cross sectional study was conducted in Vettathoor panchayat in Malappuram district of Kerala. 256 women between the age group of 18 to 49 years were included in the study. House to house survey was conducted by the investigator to identify individuals satisfying eligibility criteria. Convenient sampling method was employed till the sample size was met.

Results

Mean age of the study population was 24.45 ± 5.17 years. On assessing the knowledge regarding menstrual cups, the vast majority of the study population (95.5%) stated they were aware of them. The media was the primary source of information for half of the participants. Two-thirds of women (66.5%) believe that menstrual cups are safe devices. The main concerns about menstrual cups were limited knowledge (49.4%), leakage, and discomfort (37.7%). Merely 26.5% of the individuals in the research were now utilizing menstruation cups as their primary means of sanitary protection.

Conclusion

By addressing misunderstandings, providing correct information, and increasing access to menstrual cup resources, stakeholders may enable women to make educated decisions that improve their health and well-being.

Keywords: Menstrual cup, Rural, Malappuram, Kerala

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INTRODUCTION

Menstruation is a complex coordinated biological process and its onset usually marks the beginning of reproductive years in a female's life. The periodic shedding of the lining of a woman's uterus is referred to as Menstruation, or a menstrual period. This process typically occurs once a month. Menstruation, also known as 'the period' or 'time of the month', usually comes with cultural and religious beliefs, which impact how women and girls interpret and handle it. However, it is commonly connected with adverse meanings, such as dirtiness or humiliation.^{1,2}

Menstrual health management was defined by the World Health Organisation (WHO) in 2012 as: "Women and adolescent girls using a clean material to absorb or collect menstrual blood, and this material can be changed in privacy as often as necessary for the duration of the menstrual period. MHM includes soap and water for washing the body as required, and access to facilities to dispose of used menstrual management materials". Menstrual hygiene is a crucial component of women's health. Poor sanitation and using low-quality menstrual products during menstruation can lead to infections in the reproductive and urinary tracts, with potential long-term consequences. Menstrual hygiene products are selected according to on the social and economic factors, as well as individual preferences.^{2,3}

As women's roles in the society changed, there was a demand for compact and discrete products that helped them to carry out daily tasks without worrying about leakage. Menstruation technology, including inventions for menstruation management, has evolved throughout history. From 1854 to 1921, a number of patents were issued for products such as bandage suspenders, napkins and menstrual cups.^{4,5}

Some goods fell out of favour due to marketing efforts, such as the menstruation cup, which resurfaced 50 years after its invention. In the 1970s, a feminist and environmental movement promoted sustainable and reusable products, leading to a rebirth of the practice⁵. In recent years, the menstrual cup has emerged as a promising alternative to traditional menstrual

products, offering numerous benefits such as eco-friendliness, cost effectiveness, and improved comfort. The menstrual cup is a recently developed alternative to sanitary napkins. These cups are funnel shaped receptacles made from higher level medical grade silicone, latex or rubber. It is inserted inside the vaginal canal and are capable of collecting menstrual flow up-to 38ml depending upon the cup size. The cup can be emptied every 4-8 hours, and may take up to 12 hours depending on menstrual flow. They can be reinserted after emptying and require simple boiling which makes them a better cost-effective product available in the market.^{6,7}

International studies showed that menstrual cups scored better reviews for comfort, product quality, and overall performance. In a study conducted at Patna, users reported an increase in comfort levels of menstrual cup usage from 7.8% to 70.5% by the third cycle⁹. Malappuram is the most populous district of Kerala, which is home to around 13% of the total population of the state. Among this, 52.3% constitute the female population.⁸⁻¹⁰

Menstruation and menstrual practices still face many social, cultural, and religious restrictions which are a big barrier in the path of menstrual hygiene management. Therefore, this research aims to study the knowledge, attitude and practice regarding menstrual cup among reproductive age women in a rural area of Malappuram district. The study's findings will be useful for policymakers and healthcare providers in developing evidence-based measures to promote the usage of more eco-friendly products such as menstrual cup and improve menstrual health outcomes in this population.

METHODOLOGY

Community Based cross sectional study was conducted in a Vettathoor panchayat in Malappuram district of Kerala, which is the field practice area of Department of Community Medicine. Study was conducted from January to April 2024. Women between the age group of 18 to 49 years residing at Vettathoor panchayat were included in the study. The exclusion criteria include mentally ill persons who are unable to

respond to the study questionnaire, women who have not attained menarche, women who have attained menopause and those who are not willing to participate in the study.

According to a study by Meghana et al., 80% of the study participants had good awareness regarding menstrual cup.⁷ Taking an absolute error of 5%, sample size was calculated to be 256. Data was collected by interview method using a pre-structured questionnaire. House to house survey was conducted by the investigator to identify individuals satisfying eligibility criteria. A participant information sheet which contains all relevant information about the study was explained and the written consent was obtained from participants who were willing to be part of the study. Convenient sampling method was employed till the sample size was met. Data was entered in Microsoft Excel and analysed using SPSS version 26.0. Approval from the ethical committee of MES medical college was obtained (IEC/MES/83/2023). Informed consent was taken

from all the participants.

RESULTS

The study was conducted among 257 females between the age group of 15 to 49 years. Mean age of the study population was 24.45 ± 5.17 years. Among these women, two-thirds were under the age of 25 years. More than half of the participants in the survey had an education level of graduation and above. Only 13.6% had completed at least the tenth grade. Half of the study participants were either homemakers or unemployed. 27.2% were students, while 17.1% were employed professionals. Only 5.4% were considered skilled or semi-skilled workers. 42% of the study group was married, while the rest were unmarried. Three-quarters of the study population belonged to nuclear families, with the remainder being joint families. After analyzing the socioeconomic status of the study population, it was found that 73.5% belonged to the middle class or lower. All such socio-demographic characteristics are described in the table 1.

Table 1: Socio-demographic characteristics of study population

Variable	Response	Frequency	Percentage
Age group	Less than 25	177	68.9
	26 to 35	71	27.6
	More than 36	9	3.5
Mean age	24.45 ± 5.17 years		
Education	upto 10th standard	35	13.6
	upto 12th standard	81	31.5
	Graduate	128	49.8
	Post graduate	13	5.1
Occupation	Unemployed / Homemaker	129	50.2
	Skilled / Semiskilled	14	5.4
	Professional	44	17.1
	Student	70	27.2
Marital status	Married	108	42
	Unmarried	149	58
Type of family	Nuclear family	191	74.3
	Joint family	66	25.7
Socio-economic class	Upper class	39	15.2
	Upper middle class	29	11.3
	Middle class	26	10.1
	Lower middle class	42	16.3
	Lower class	121	47.1

On assessing the knowledge regarding menstrual cups, the vast majority of the study population (95.5%) stated they were aware of them. The media was the primary source of information for half of the participants, followed by medical professionals (20.6%), friends (17.9%), and family (7%). Two-thirds of women (66.5%) believe that menstrual cups are safe devices. However, 22.2% believe it is harmful, and 11.3% are unsure whether it is safe or not. When asked about the mechanism of action of a menstrual cup, 66.5% of the women correctly responded that it collects blood. Just one-fourth of the participants in the research study were aware that menstrual cups come in various sizes, and only 14.5% of them correctly

answered the question about sterilizing the cup. 59.5% of participants were aware of the correct time to empty menstrual cups. Even though 57.6% recognized that menstrual cups could be used before marriage, 25.3% said they should not. 20.2% of women believe that menstrual cups can be used as a form of contraception. Only 28.8% of the participants knew about the long-term use of menstrual cups. Less than half of the women (46.3%) believe that menstrual cups can lessen the environmental effect of disposable menstrual hygiene items. All details related to the knowledge regarding menstrual cups are shown in table 2 below.

Table 2: Distribution of study population based on knowledge regarding menstrual cup

Variable	Response	Frequency	Percentage
Do you know about menstrual cups?	Yes	246	95.7
	No	11	4.3
Source of information	Family	18	7.0
	Friends	46	17.9
	Media	130	50.6
	Medical professionals	53	20.6
	Others	10	3.9
Do you think menstrual cups are safe device?	Yes	171	66.5
	No	57	22.2
	Don't know	29	11.3
What is the mechanism of action of a menstrual cup?	Collection	171	66.5
	Absorption	51	19.8
	Both	20	7.8
	Don't know	15	5.8
What are the different sizes of menstrual cups available?	Small	10	3.9
	Medium	96	37.4
	Large	78	30.4
	All the above	62	24.1
	Don't know	11	4.3
What is the emptying time of the cup?	1-2 hours	83	32.3
	6-12 hours	153	59.5
	Don't know	21	8.2
What is the method for sterilization of cups?	Washing with water	29	11.3
	Boiling	126	49.0
	Using disinfectant solution	52	20.2
	All the above	38	14.8
	Don't know	12	4.7
Can the cup be used before marriage?	Yes	148	57.6
	No	65	25.3
	Don't know	44	17.1



Can the cup be used as a contraceptive method?	Yes	52	20.2
	No	153	59.5
	Don't know	52	20.2
How long can you use a menstrual cup?	Till 1 month	11	4.3
	Till 6 months	55	21.4
	Till 1 year	82	31.9
	Till 5 years	74	28.8
	Don't know	35	13.6
Do you think menstrual cup can reduce the environmental impact caused by disposable menstrual hygiene products?	Yes	119	46.3
	No	97	37.7
	Don't know	41	16.0

The main concerns about menstrual cups were limited knowledge (49.4%), leakage, and discomfort (37.7%) as described in table 3. The majority of participants (79.8%) were willing to pay less than Rs. 300 for a menstrual cup. Only 20.2% were willing to spend between Rs 300 and Rs 500. Out of all the women, 58.8% said they would use a menstrual cup if one was made

available to them, while the remaining women said they would not. Major reasons for refusing to use a menstrual cup include a lack of knowledge, the perception that it is unsafe before marriage, religious reasons, and so on. About 59% of women said they would advocate the usage of a menstrual cup to others.

Table 3: Distribution of study population based on attitude regarding menstrual cup

Variable	Response	Frequency	Percentage
What are your concerns about menstrual cups?	Limited knowledge	127	49.4
	Leakage and discomfort	97	37.7
	High cost	8	3.1
	Allergies	3	1.2
	Others	22	8.6
How much would you pay for a menstrual cup?	Less than Rs. 100	118	45.9
	Rs. 100 to 300	87	33.9
	Rs. 300 to 500	52	20.2
If a menstrual cup is made available, will you use it?	Yes	151	58.8
	No	106	41.2
Will you recommend the usage of menstrual cups to others?	Yes	152	59.1
	No	105	40.9



Merely 26.5% of the individuals in the research were now utilizing menstruation cups as their primary means of sanitary protection as shown

in table 4. Approximately 62.6% used sanitary pads, whereas 10% used cotton cloth as their sanitary protection strategy.

Table 4: Distribution of study population based on practice regarding menstrual cup

Variable	Response	Frequency	Percentage
What sanitary protection do you currently use?	Sanitary pad	161	62.6
	Cotton cloth material	26	10.1
	Menstrual cup	68	26.5
	Others	2	.8

DISCUSSION

Among 257 study participants between the age group of 15 to 49 years, more than half of the participants in the survey had an education level of graduation and above. The majority of the survey participants (95.5%) were aware of menstrual cups. For half of the participants, the media was the main source of information, followed by friends, family, and medical experts. 20.2% of women think menstrual cups can be used as a form of contraception. Only 28.8% of participants were aware of the long-term use of menstrual cups. Less than half of women (46.3%) agree that menstrual cups can reduce the environmental impact of disposable menstrual hygiene items. 58.8% said they would use a menstrual cup if they were available. The main reasons for refusing to use a menstrual cup were a lack of awareness, the perception that it was unsafe before marriage, religious beliefs, and so on. Only 26.5% of the participants in the study used menstrual cups as their primary form of sanitary protection. According to a prior study conducted in Karnataka by Ballal K et al., 82% were aware of menstrual cups, but just 2.6% used them.¹¹ Another study conducted by Meghana et al. in Karnataka stated that, 80% of the survey participants were familiar with the menstrual cup. 36.7% of participants gathered information from the media, 26.7% from relatives, 20.8% from friends, and 14.2% from media personnel. The majority of participants (58.33%) were between

the ages of 21 and 30 years. The participants' educational levels were predominantly undergraduate (35%) or postgraduate (25.8%). The most common issue with menstruation cups was fear of leakage (51.7%), followed by discomfort (26.7%). 65% of participants stated that if a menstrual cup is made available, they will use it.⁷

A study conducted in Kerala by Arumadi A et al. stated that only 12.8% of the participants were using the menstrual cup, either by itself or in combination with sanitary pads, despite the fact that all of them had heard of it before. Of the various concerns voiced by the participants, 58.7% were concerned about the insertion of a foreign material into their bodies. Overall, the majority of the participants had a positive attitude towards the use of menstrual cups, with 91.74% considering it to be a better alternative to other sanitary products.³ A similar study conducted in an urban context in Kerala by Devan GM et al. found that 73.7% of participants had good awareness of menstrual cups. Lack of information (22.6%) and fear of insertion (56.2%) were the most common reasons for not using a menstrual cup.¹² The strength of the study is that it focuses on rural women, which provides unique insights into a demographic that is frequently disregarded in menstrual hygiene research. This focus allows for a more nuanced understanding of the challenges

and opportunities associated with menstrual cup adoption in rural settings, ultimately contributing to more effective interventions and policies tailored to the needs of this population. A potential weakness of the study may be its reliance on self-reported data, which can be subject to bias. Additionally, the study may face challenges in ensuring the representativeness of the sample, particularly if there are barriers to participation or if certain groups of women are underrepresented.

CONCLUSION

The present study has shed light on the prevailing knowledge and attitudes of menstrual cups in this

rural Malappuram district area. Furthermore, the study emphasizes the need for targeted educational activities and community involvement measures to raise awareness and acceptability of menstrual cups among rural women. By addressing misunderstandings, providing correct information, and increasing access to menstrual cup resources, stakeholders may enable women to make educated decisions that improve their health and well-being. Recognizing knowledge gaps and attitudinal barriers allows us to strive toward a more inclusive and supportive environment in which all women have access to safe and effective menstrual hygiene options.



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