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Original Research Article

Knowledge, attitude and practice regarding menstrual cups in a veterinary college in central Kerala, India: a cross-sectional study

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ABSTRACT

Background: Menstrual cup is a novel, safe, sustainable, cost-effective menstrual product. Despite its advantages, it is not widely accepted in our country, probably due to varied reasons. Objective was to assess the knowledge, attitude and practice of menstrual cups among veterinary college students of central Kerala.
Methods: A cross-sectional study was conducted among 177 students at a government veterinary college in Kerala, India. Data was collected using a structured questionnaire to assess knowledge, attitude and practice of menstrual cup. Knowledge score was calculated for all respondents based on eight knowledge-related questions. Practice questions were asked to female students who had used menstrual cups at least once.
Results: Thirty of the 177 respondents were male. Majority (84.7%) had adequate knowledge; knowledge was significantly better in females. The most common concern raised by the respondents was the risk of leakage of menstrual blood (30.0%) and breakage of hymen (13.0%). Forty-five respondents had used a menstrual cup at least once, 37 were current users. Insertion, removal and usage were difficult in the initial cycles but later became easier. About one-fifth of the users faced problems like dryness, irritation, allergy or rashes.
Conclusions: The study concluded that despite having adequate knowledge regarding menstrual cups, the acceptance and usage is still not achieved.

Keywords: Cost effectiveness, Menstrual cup, Menstrual hygiene, Sustainability

INTRODUCTION

A woman's life passes through certain unique stages that have a bearing on her physical, mental and social life. Menstruation is one such physiological condition, often embedded in some harsh cultural realities. Many times, girls and women are unable to perform safe menstrual practices. For the attainment of a good menstrual health women need to have access to safe and hygienic menstrual products.[1] Women in India predominantly depend on clothes or sanitary napkins for their menstruation. Cloth, as a sanitary product, is difficult to manage due to the need for washing and drying in sunlight before the next use. Sanitary napkins, if not handled properly, can pose serious risk to the health of the women as well as the environment. There is a serious risk of genitourinary infection if proper management of these products are not performed.[2]

Into this backdrop came the eco-friendly menstrual cup, a device for menstrual flow management. These cups are made from higher level medical grade silicone, latex,

rubber, or elastomer and when inserted inside the vaginal canal are capable of collecting menstrual flow.[3] They can be emptied and reinserted and they are required to be boiled after each cycle. They can be used for 5-10 years. They reduce the waste generated during menstruation and hence are more eco-friendly and environmentally sound. Despite the many advantages of the menstrual cup, there is a lack of penetration of the practice of using the menstrual cup, especially in countries like India.

Studies about the knowledge on the use of menstrual cup conducted among the student population have thrown light on the major barriers that hinder their use among young women like lack of awareness about the use of menstrual cup.[4] Even the studies conducted among the college going youth in the urban cities demonstrated a surprisingly less level of awareness about menstrual cup.[5] Studies conducted among rural women in the reproductive age group in a tertiary care setting have shown that though most of the participants were aware of the usage of the menstrual cup the acceptance of the cup is still not achieved. Even the knowledge level is poor in most of the participants and more than half of them were not using menstrual cup due to the fear of leakage.[7]

Studies done previously have examined various aspects related to menstruation like menstrual hygiene, knowledge about menstruation and practices during menstruation, but very few have examined the knowledge, attitude and practices around the use of menstrual cups especially from central Kerala.[10-14] With growing concerns over sustainability and use of environmentally friendly products, identifying the gap in knowledge, attitude and practice in the use of menstrual cups will provide the right directions to encourage the use of menstrual cups. This is especially important in the young generation who are always welcoming to the newer technologies.

Thus, this study sought to evaluate the knowledge, attitude and practices (KAP) regarding menstrual cup among college students of central Kerala.

METHODS

A cross-sectional study was conducted among students at a veterinary college in Kerala, India in April 2022. Undergraduate veterinary students in different batches were approached and responses were collected from those who gave consent. These respondents included both males and females.

Data was collected using a structured self-administered questionnaire. The questionnaire consisted of sociodemographic details, and questions to assess knowledge, attitude and practice related to use of menstrual hygiene and specifically about menstrual cups. A scoring system was developed by the investigators to assess the level of knowledge based on the responses to the questionnaire.

Knowledge score was calculated based on eight knowledge-related questions; individuals who scored above 5 were considered to have good knowledge, while a score of 5 or less was classified as poor knowledge. All participants, irrespective of gender, were asked to respond to knowledge and attitude questions. Practice questions were directed towards female students who had used Menstrual cups at least once. Statistical analysis was performed using SPSS software (version 16.0).

RESULTS

A total of 177 respondents were included into the study. Their age ranged from 18 to 30 years, with a mean age of 21.16 (SD=1.598) years. Thirty (17.5%) were males. Ten of the respondents (5.6%) were married (Table 1).

Table 1: Socio demographic profile of participants.

Sociodemographic factors		Frequency	Percent
Age (years)	18-20	51	28.8
	21-23	119	67.2
	>23	5	4.0
Sex	Female	146	82.5
	Male	31	17.5
Religion	Hindu	99	55.9
	Muslim	41	23.2
	Christian	26	14.7
	No response	11	6.2
Marital status	Married	10	5.6
	Unmarried	167	94.4
Total		177	100.0

Knowledge

Majority of the respondents had good knowledge regarding menstrual hygiene in general, and also about menstrual cups. Overall, 84.7% got five or more of the eight questions correct, and thereby have adequate knowledge.

Sixty-nine (39.0%) got all the answers correct. The knowledge was significantly better among females, with 91.8% scoring 5 or above, as compared to 51.6% of the males. ($p<0.001$). Religion and marital status of the respondents did not have a significant association with the knowledge level (Table 2).

When asked how they would grade their own knowledge, nearly half the respondents (49.7%) rated their knowledge regarding menstrual cups as good, 67 (37.87%) felt it was average; 22 (12.4%) said their knowledge was poor. Only seven of the 31 males (22.6%) considered themselves to have good knowledge, as compared to 55.5% of the females ($p=0.002$).

Table 2: Correct responses to knowledge questions.

Knowledge questions	Sex (%)		Total n=177 (%)
	Female n=146	Male n=31	
What is the average duration of menstruation in females?	134 (91.8)	26 (83.9)	160 (90.4)
Which of these menstrual products are you aware of? (list sanitary pads, menstrual cups, tampon)	99 (67.8)	15 (48.4)	114 (64.4)
Have you heard about menstrual cups?	145 (99.3)	29 (93.5)	174 (98.3)
What is a menstrual cup made of?	116 (79.5)	10 (32.3)	126 (71.2)
Are you aware that the menstrual cups are available in various sizes?	113 (77.4)	16 (51.6)	129 (72.9)
How frequently do you think a menstrual cup should be removed and cleaned during a day of menstruation?	142 (97.3)	26 (83.9)	168 (94.9)
Can the cup be used by a nulliparous woman?	142 (97.3)	27 (87.1)	169 (95.5)
Can the cup be used by a parous woman?	141 (96.6)	27 (87.1)	168 (94.9)
Total score (≥5)	134 (91.8)	16 (51.6)	150 (84.7)

Attitude

The most common concern raised by the respondents was the risk of leakage of menstrual blood (30.0%) and breakage of hymen (13.0%). Other concerns included loss of virginity, loss of fertility, difficulty or pain in insertion and infections. Two respondents mentioned the risk of the cup getting stuck as a concern. Eight respondents felt their religious beliefs restricted the use of menstrual cups; 22 (12.4%) said they experienced family restrictions. Majority of the respondents (84.75%) opined that menstrual cups can ease outdoor activities. When asked if Menstrual cups are safe to use, 49.7% agreed and 39.0% strongly agreed.

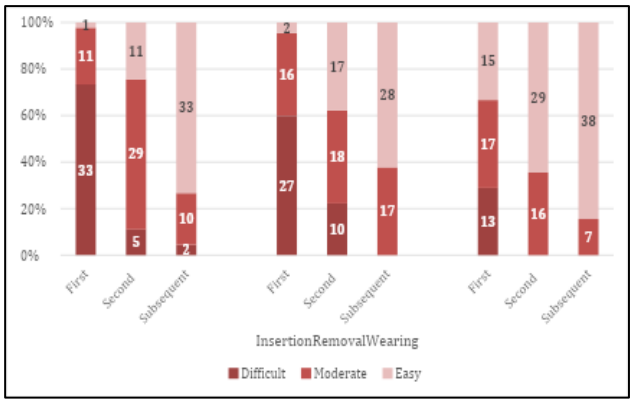

Figure 1: Difficulty in insertion, removal and wearing of menstrual cup over the period of use.

Practice

Out of the 177 participants, only 45 (25.4%) had used a menstrual cup at least once; of them, 37 were using it currently. Questions regarding practice were asked to these 45 respondents. Thirty-three of the 45 found it difficult to insert the menstrual cup the first time, five found it difficult the second time; in subsequent attempts, ten respondents had moderate difficulty while 33 found it easy. For removal, 27 found it difficult in the first attempt, none in the subsequent attempts. Overall, insertion, removal and usage were difficult in the initial cycles but later became easier. Ease during practice has a greater role when it comes to the menstrual cup being the menstrual product of choice (Figure 1). About three-quarters (77.7%) experienced leakage while using menstrual cups. Seven users said they always experienced leakage in the initial usage; the frequency came down in the subsequent cycles. However, over half the users (26/45) continued to have occasional leakage even in subsequent cycles. This was one of the cardinal factors that made them opt for other menstrual products; 60% of the participants depend on other additional products also during their cycle. Ten of the 45 users (22.2%) reported problems during the use of cups, which included dryness, local rashes and allergic reactions. Thirty-five of the users cleaned the cups with warm or boiling water; four used disinfectant solution to clean their menstrual cups. Among the 45 users, all except one agreed that they felt any economic advantage when switching to menstrual cups; 43 recommended it to others (Figure 2).

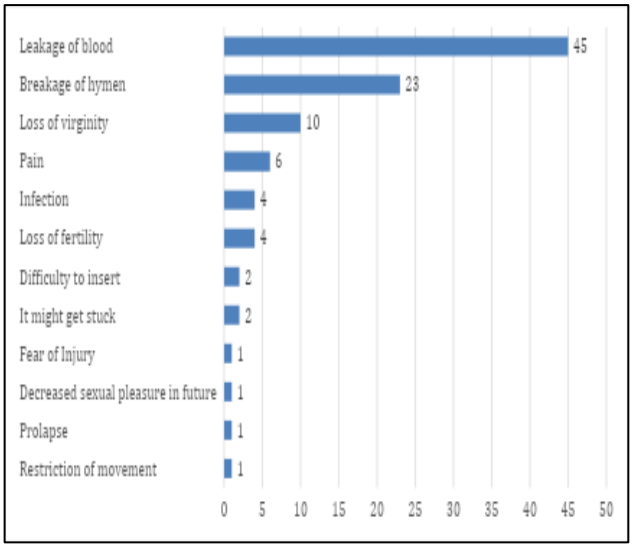

Figure 2: Concerns regarding use of menstrual cup.

DISCUSSION

This study assessed the knowledge, attitude and practice regarding menstrual cups among veterinary college students in central Kerala, India. Out of 177 study participants 84.7% demonstrated adequate knowledge regarding menstrual cups. Moreover, a significant proportion of respondents expressed positive attitudes towards the use of menstrual cups. However, concerns regarding leakage and injury to hymen were noted among some participants. Among the 45 students who used menstrual cups, initial challenges in insertion and removal were reported, but the ease of use improved over the subsequent cycles.

We compared our results with previous studies. A study by Ballal et al among women in the reproductive age group reported 82% of the participants had good knowledge about the menstrual cup; the respondents were predominantly from medical and paramedical backgrounds.[15] This aligns with our findings, where the academic setting may have contributed to higher awareness levels. In contrast, a similar study conducted among reproductive women in a rural tertiary care hospital reported a low percentage (5.8%) of the study population had good knowledge about the menstrual cup.[16] Similarly, Ali et al found that only 11.4% of the general population were aware of menstrual cups, highlighting the urban-rural divide in menstrual health awareness.[17]

Regarding safety perceptions, a study conducted among healthcare workers and students found that 62.5% thinks that menstrual cup as a safe device, whereas in our study, this was only 49.7%.[16] Interestingly, a study by Eti et al in Bangalore reported that 92.4% of the medical undergraduate students perceived menstrual cups to be safe.[18] This disparity may reflect variations in education levels, cultural perceptions, and exposure to menstrual health information. Leakage of menstrual blood is an important concern faced by most users. Bhat and Kakani reported leakage issues only in 6.6% of the participants, while the current study found significantly higher leakage concerns, with 42 out of 45 experiencing leakage in the initial use.[19]

Sociocultural factors also play an important role in adoption of menstrual cups. In a qualitative study among school-going adolescents in rural Nepal, possibility of 'loss of virginity' and fertility emerged as points of concern. About a third (37.3%) of the participants in our study expressed concerns about loss of virginity and breakage of hymen; religious and family restrictions were reported by 4.5% and 12.4% of participants, respectively. These findings underscore the need for targeted awareness programs addressing cultural taboos and misinformation surrounding menstrual cup use.

A few of our participants were males; the level of awareness was significantly lower when compared to females. Religion and marital status had no association with awareness. Other studies show similar results, with lower levels of awareness among males.[5,20] While menstrual hygiene primarily affects females, increasing awareness among young males is essential, given its relevance to half the population and its environmental impact.

This study highlighted the need for awareness programs within educational institutions to address misconceptions and to promote the use of menstrual cups as a sustainable menstrual hygiene product. Practical issues like leakage and difficulty in insertion and removal need to be addressed.

CONCLUSION

While the awareness levels are relatively high among our study population, significant challenges remain in terms of practical application and perception of safety. Addressing misconceptions through targeted educational interventions can enhance acceptance and usage of menstrual cups. Additionally, policy initiatives from the government to promote accessibility and affordability will further support sustainable menstrual health management.

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