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Original Research Article

Knowledge and Attitude regarding menstrual cups among young women

Tannu Thapa*, Susha Mary Roy

Department of Obstetrics and Gynaecological Nursing, Ramaiah Institute of Nursing Education and Research, Bangalore, Karnataka, India

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*Correspondence:

Tannu Thapa,

E-mail: tannuthapa1@gmail.com

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ABSTRACT

Background: Menstruation is cyclic vaginal bleeding that occurs physiologically as a result of the shedding of the endometrium. The maintenance of adequate perineal hygiene during menstruation is very important. One product which is gaining quite a popularity over few years is a flexible, reusable cup that is inserted inside the vagina to collect blood during menstruation known as a menstrual cup. The benefits of a menstrual cup are numerous which include comfort, hygiene, cost-effectiveness and eco-friendliness. The acceptance of menstrual cups among women in India is varied due to personal and sociocultural factors. The objective of this study was to assess the knowledge and attitude regarding menstrual cups among young women.

Methods: A descriptive study design was adopted for the study. 200 young women were selected using non-probability convenient sampling technique. The study tool was administered to assess the knowledge and attitude regarding menstrual cups.

Results: Among 200 young women, 49% of young women had adequate knowledge, 43.5% had moderately adequate knowledge and 7.5% had inadequate knowledge regarding menstrual cups. 64.5% of young women had neutral attitude, 31% had positive attitude and 4.5% had negative attitude regarding menstrual cups.

Conclusions: Though young women are aware of menstrual cups but majority of them are skeptical towards its use. The findings suggests that mass in-depth awareness programmes for nurses and other health professionals should be organised and support groups need to be created to provide adequate information and counselling to the public regarding the use of menstrual cups.

Keywords: Menstrual cups, Knowledge, Attitude, Awareness, Menstrual hygiene

INTRODUCTION

Menstruation is a crucial part of women's life that prepares the women's body to give rise to a new life. A period of vaginal bleeding that occurs in women every 28-30 days for 3-7 days is known as menstruation. It is crucial that a woman practices proper menstrual management for optimum health and dignity.

Menstrual hygiene and management implies "access to menstrual hygiene products to absorb or collect menstrual

blood, privacy to change the materials and access to facilities to dispose used menstrual management materials".¹

The materials that are commonly used to manage menstruation are cloths, sanitary pads, and tampons. According to the reports of the National Family Health Survey-5, among the age group of 15-24 years, 77.3% of women use hygienic methods during menstruation. Only 0.3% use menstrual cups, 15% use locally prepared napkins, 49.6% use cloth and 64.4% use sanitary napkins.²⁻

³ Sanitary pads are the most widely used product when compared to tampons. 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.⁴ A study conducted in Karnataka among reproductive-aged women showed that 38% of women using clothes during menstruation had reproductive tract infections against 15% of those using sanitary pads.⁵ Poor menstrual hygiene management leads to numerous infections like vulvo-vaginal candidiasis, bacterial vaginosis and *Trichomonas vaginalis* which poses a great risk for cervical cancer.⁶

Disposing the pads and tampons hygienically is another added challenge. Sanitary napkins are made of non-biodegradable plastic, which is not only bad for health but also detrimental to the environment. Water Aid India and MHAH (Menstrual Hygiene Alliance of India) reported that it takes up to 800 years to decompose one pad.⁷ The high cost of menstrual hygiene products also received significant attention as the average cost of sanitary napkins is about Rs.60 per menstrual cycle then estimated annual cost comes to around Rs. 720. NFHS-5 reports also showed a directly proportional relation between wealth and the usage of hygienic methods during menstruation.³

One of the effective menstrual hygiene products which is gaining popularity in the last 3-4 years is a device called the menstrual cup. A menstrual cup is a small, funnel-shaped, flexible, reusable cup, made of silicone, latex, or a thermoplastic isomer that is inserted into the vagina to collect blood during menstruation. Available in different sizes from small to medium and big, menstrual cups are more economical as it is a one-time purchase product and can be used for 6-10 years. It's worn internally hence it eliminates foul odour and the feeling of stuffiness. It can also be worn for longer hours because of its capacity to hold a large volume of blood and the capability to acclimatize to the body fully. A menstrual cup can be sterilized before use and therefore, is the most hygienic and effective menstrual hygiene product. It also reduces the burden of sanitary waste on the earth. Several studies conducted abroad as well as in India found that the majority of women preferred menstrual cups over other methods of menstrual management.

The Government and people are also recognizing the importance of sustainable methods of managing menstruation and are taking steps forward to create awareness about them. One such project is 'Project thinkal' in Alappuzha Municipality, where 5000 menstrual cups were distributed to the women for effective management during the devastating flood in 2018.⁸ Similarly, 'Green the red' campaign was carried out by a group of eco-activists in 2018 in Bengaluru to educate the public about menstrual cups and reusable cloth for an eco-friendly way of dealing with menstruation.⁹ The Government of Karnataka has recently launched a scheme called Maitri menstrual cup scheme on 6th July 2022 in

two districts of Karnataka- Dakshina Kannada and Chamarajanagar where beneficiaries are adolescent girls aged 16-18 years belonging to Adivasi Soliga community with the aim to promote hygiene and reduce the burden of sanitary waste by replacing sanitary pads with eco-friendly menstrual cups.¹⁰

Despite many advantages of the menstrual cups over any traditional method of menstrual management, people are still unaware of menstrual cups which could be due to lack of awareness, less promotion, myths concerning virginity and disinterest as women are too comfortable with their traditional methods. Women have to undergo the process of menstruation for almost half of their life and it is critical that they know about the available products for effective menstrual management. Numerous health problems may arise from ineffective menstrual hygiene management because of which awareness about sustainable menstrual hygiene products is essential. Education, discussion of myths and perceptions, continued support and access to knowledge are therefore pivotal for cup acceptability.

METHODS

A descriptive research design was adopted for the study. The study was conducted at the selected colleges under Ramaiah Group of Institutions. Non-probability convenient sampling technique was used to select 200 young women aged between 18-25 years as participants for the study.

Inclusion criteria

Those available at the time of data collection were included.

Exclusion criteria

Those who were not willing to participate in the study were excluded.

Description of tool

It consisted of three sections as follows:

Section A: Socio-demographic profile

Age, course of study, marital status, type of family, place of residence, occupation of parents, monthly family income, regularity of menstrual cycle, menstrual flow, gynaecological problems, sanitary hygiene product used, problems associated with current sanitary hygiene product, previous information about menstrual cup, source of information and interest to know more about menstrual cups.

Section B: Structured knowledge questionnaire on menstrual cups

The questionnaire consisted of 20 items. These items covered the following aspects of menstrual cups -

meaning, material, structure, size, method of use, function, benefits and risks.

Section C: Structured attitude scale on menstrual cups

The scale was developed to measure values, beliefs, and emotion of young women towards menstrual cups, willingness to use them and acceptance of it as a better choice for menstrual management. It consists of 22 statements with 9 positive and 13 negative statements.

Content validity

It was obtained from 16 experts (nurse experts and obstetricians). Modification of the tool was done as per the suggestions given by them.

Reliability

Tool was tested for reliability using Split half and Cronbach's alpha, values obtained for both structured knowledge questionnaire and structured attitude scale were 0.75 respectively.

Pilot study

The pilot study was conducted at Ramaiah College of Law, Bangalore. The study was found to be feasible and practicable.

Data collection

After getting formal permission from the concerned colleges, data collection was initiated. Written consent was obtained from each subject after explaining the study purpose. Socio-demographic data, structured questionnaire for knowledge and structured attitude scale was administered. Subjects were requested to respond to the given questions. The average time taken to complete all the sections by the subjects was 20-25 min. Data was entered in master sheet and coding was done.

Statistical analysis

SPSS (version 20.0) was used. Descriptive statistics were used for all the study variables. Karl Pearson's correlation to calculate the relationship between knowledge and attitude and chi square to calculate the associations between socio-demographic variables with knowledge and attitude regarding menstrual cups were used.

RESULTS

Socio-demographic characteristics of young women

Among 200 young women, 70.5% belonged to the age group of 18-21 years while 29.5% were in the age group of 22-25 years. 35% of them were pursuing Nursing while 34% and 31% of subjects were from Dental and Engineering department respectively. All the subjects

were unmarried, 86% of the subjects belonged to nuclear family while 83% of them resided at urban area.

Majority 63.5% of subjects' mothers were homemakers and 92.5% of subjects' fathers belonged to non-medical field. 28% of subjects had monthly family income between Rs. 75,001- Rs. 100,000. 81.5% of the subjects had regular menstrual cycle while 75% had moderate menstrual flow. 14.5% subjects had gynaecological problems, out of which 13% subjects had polycystic ovarian syndrome.

It was found that majority of the subjects, 93.5% used sanitary pads, 3.5% used combined methods (tampons, cloth pads, etc with sanitary pads) and only 3% used menstrual cups. 47% of subjects reported problems with the use of current sanitary product where irritation and discomfort, 16.2% and 12% respectively were the major problems faced by them.

89.5% of subjects had information about menstrual cups where Internet/social media 46.5% was the major source of information.

Percentage distribution of level of knowledge and attitude regarding menstrual cups among young women

Among the study population, 49% (98) of subjects had adequate knowledge, 43.5% (87) of subjects had moderately adequate knowledge and 7.5% (15) had inadequate knowledge.

More than 2/4th (129) of the study population had neutral attitude towards menstrual cups while 31% (62) and 4.5% (9) had positive and negative attitude respectively.

Correlation between knowledge and attitude regarding menstrual cups

There was a moderate positive correlation ($r=0.407$) between knowledge and attitude and was statistically significant ($p<0.001$).

Association of level of knowledge with selected socio-demographic variables

A significant association of Knowledge was found with course of study ($p=0.004$), type of sanitary hygiene product used ($p=0.005$), existing information about menstrual cups ($p<0.001$) and source of information like siblings ($p=0.040$), internet/social media ($p<0.001$).

Association of level of attitude with selected socio-demographic variables

A significant association of attitude was found with regularity of menstrual cycle ($p=0.048$), type of sanitary hygiene product used ($p<0.001$), existing information about menstrual cups ($p<0.001$), source of information like friends ($p=0.040$), siblings ($p=0.036$) and internet/social media ($p=0.016$).

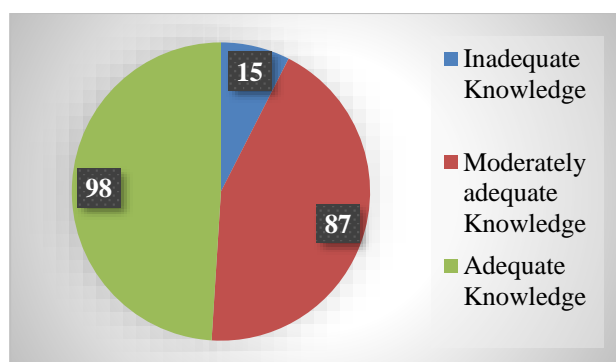


Figure 1: Knowledge regarding menstrual cups among young women (n=200).

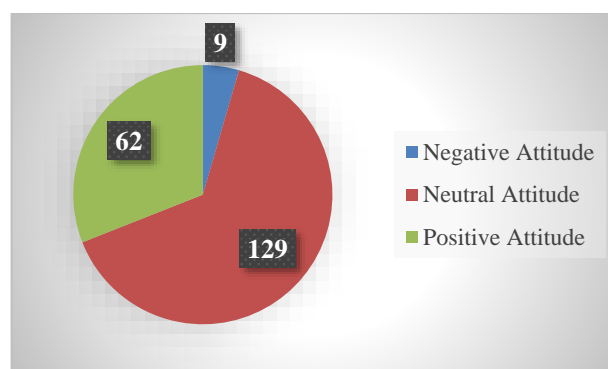


Figure 2: Attitude regarding menstrual cups among young women (n=200).

Table 1: Frequency and percentage distribution of Socio-demographic characteristics of young women (n=200).

S. no.	Socio-demographic variables	N	%
1.	Age in years		
	18-21	141	70.5
	22-25	59	29.5
2.	Course of study		
	BSc Nursing	70	35
	Bachelor of Dental Surgery	68	34
3.	Marital status		
	Unmarried	200	100
4.	Type of family		
	Nuclear	172	86
	Joint	28	14
5.	Place of residence		
	Urban	166	83
	Rural	34	17
6.	Occupation of parents (mother)		
	Medical field	10	5
	Non- medical field	63	31.5
	Homemaker	127	63.5
	Occupation of parents (father)		
	Medical field	8	4
	Non-medical field	185	92.5
	Unemployed	7	3.5
7.	Monthly family income (Rupees)		
	<25,000	23	11.5
	25,001-50,000	44	22
	50,001-75,000	25	12.5
	75,001-100,000	56	28
	> 100,000	52	26
8.	Is your menstrual cycle regular?		
	Yes	163	81.5
	No	37	18.5
9.	Nature of menstrual flow		
	Heavy	33	16.5
	Moderate	150	75
10.	Do you have any gynaecological problems?		
	Yes	29	14.5
	No	171	85.5

Continued.

S. no.	Socio-demographic variables	N	%
	If yes, specify:		
	Polycystic ovarian syndrome	26	13
	Dysmenorrhea	3	1.5
	Type of sanitary hygiene product used		
11.	Sanitary pads	187	93.5
	Menstrual cup	6	3
	Combined use (tampons, cloth pad, etc.)	7	3.5
12.	Do you face any problems with the sanitary product you use during your menstrual period?		
	Yes	94	47
	No	106	53
13.	Problems with current sanitary hygiene product: (select all that apply)		
	Irritation	57	16.2
	Rashes	25	7
	Itching	35	10
	Foul odour	17	4.8
	Leakage	31	8.8
	Discomfort	42	12
	Disposal problems	24	6.8
	Expensive	6	1.7
14.	Previous information about menstrual cups		
	Yes	179	89.5
	No	21	10.5
15.	Source of information (select all that apply)		
	Friends	75	24
	Siblings	15	4.8
	Family	19	6.1
	Internet/social media	145	46.5
	Television/newspaper/radio	27	8.7
	Health professionals	11	3.5

Table 2: Association of level of knowledge with selected socio-demographic variables (n=200).

S. no.	Socio-demographic variables	Level of knowledge			Chi square value	P value
		Adequate	Moderately adequate	Inadequate		
1.	Course of Study				15.441	0.004*
	BSc. Nursing	29	36	5		
	Bachelor of Dental Surgery	26	35	7		
	Bachelor of Engineering	43	16	3		
2.	Type of sanitary hygiene product used				10.463	0.005*
	Sanitary pads	86	86	15		
	Menstrual cup/ combined use	12	1	0		
3.	Previous information about menstrual cups				35.147	<0.001*
	Yes	95	77	7		
	No	3	10	8		
4.	Source of information					
	Siblings	12	3	0	6.455	0.040*
	Internet/social media	80	63	2	30.438	<0.001*

Note: *-Significant at p<0.05.

Table 3: Association of level of Attitude with selected socio-demographic variables (n=200).

S No.	Socio-demographic variables	Level of attitude			Chi square value	P value
		Negative	Neutral	Positive		
1.	Regularity of menstrual cycle				6.082	0.048*
	Regular	9	109	45		
	Irregular	0	20	17		

Continued.

S No.	Socio-demographic variables	Level of attitude			Chi square value	P value
		Negative	Neutral	Positive		
	Type of sanitary hygiene product used					
2.	Sanitary pads	9	128	50	24.440	<0.001*
	Menstrual cup/ combined use	0	1	12		
	Previous information about menstrual cups					
3.	Yes	5	113	61	16.743	<0.001*
	No	4	16	1		
4.	Source of information					
	Friends	1	44	30	6.443	0.040*
	Siblings	0	6	9	6.638	0.036*
	Internet/social media	3	93	49	8.262	0.016*

Note: *Significant at $p < 0.05$.

DISCUSSION

Among 200 young women, 49% had adequate knowledge, 43.5% had moderately adequate and 7.5% had inadequate knowledge regarding menstrual cups. A similar study conducted in 2020 in Mangalore on menstrual cup awareness among 300 reproductive-aged group women showed that 65.75% of the subjects had good knowledge regarding menstrual cups.¹¹

Women in the reproductive age are now seeking for better and safe menstrual hygiene products and through peers, advertisements on various social media, menstrual cups have gained quite a popularity in the past few years.

As per the attitude towards using menstrual cup among 200 young women, 64.5% had a neutral attitude, 31% had a positive attitude and 4.5% had a negative attitude. This finding is contradicted by a similar study conducted on knowledge, attitude and practices regarding menstrual cups among 120 women in Bangalore in 2021 which revealed that 65% of subjects showed willingness towards the use of menstrual cups whereas 28.3% were neutral/not sure towards its use.¹² A study conducted in Zimbabwe on menstrual product choice and uptake among young women in 2019 found that sociocultural norms influenced the attitude of women towards the use of menstrual cups.¹³ Use and acceptance of menstrual cups are influenced by personal and cultural factors like loss of virginity, ease of its use, sterilization, and reluctance towards using new products which are the major barriers to the acceptability of menstrual cups.

There was a moderate positive correlation ($r=0.407$) between knowledge and attitude and was statistically significant ($p < 0.001$). The finding is contradictory with the study conducted in 2019 in Bangalore on knowledge about menstrual cup and its usage among 400 medical students where 93% of the participants, despite being aware of menstrual cups, none of them had used it.¹⁴ It is mainly because of those personal and cultural taboos associated with the use of menstrual cups. Several studies found that using a menstrual cup correctly requires a great deal of practice and women struggle to use menstrual cups

because of impatience, loss of motivation, and unfamiliarity with their use.¹⁵⁻¹⁷

A significant association of Knowledge was found with the course of study ($p=0.004$), type of sanitary hygiene product used ($p=0.005$) and previous information about menstrual cups ($p < 0.001$). Similar studies conducted in South India in 2017-2020 revealed that women resorted to using menstrual cups because of the discomfort with the previous menstrual hygiene product and also found that social media was the major source of information for the women.¹⁸⁻¹⁹ With easy access to technology, social media has become a hub for people where they can learn numerous things. Infomercials, videos, advertisements by social media influencers, etc. have been a major source of information for the public.

A significant association of Attitude was found with regularity of menstrual cycle ($p=0.048$), type of sanitary hygiene product used ($p < 0.001$) and existing information about menstrual cups ($p < 0.001$). The finding is consistent with a cross-sectional study conducted in Portugal in 2021 which showed that 42.6% of the women with light menstrual flow had a negative attitude toward the use of menstrual cups while others with moderate and heavy flow considered its use and women using tampons were more open towards using menstrual cup.²⁰ A qualitative study done in 2020 on experiences of the women using menstrual cup in Kerala found that peers and social media were the major source of information that had an influence in adapting to the use and acceptability of menstrual cups.¹⁹ Menstrual cups can collect and hold more blood up to a period of 12 hours thereby reducing the frequency of change and making it popular among women with heavy menstrual flow. Peer education and support has always played an important role in the adaptation of any trend. Thus, friends and siblings greatly influence the uptake and the use of menstrual cups.

CONCLUSION

Though young women are aware of menstrual cups but the majority of them are skeptical towards its use. This is mainly due to reasons attributing to personal and sociocultural factors which greatly affects the acceptability

of menstrual cups. Also, the major source of information for the young women was found to be social media, which somewhere lacks in providing empathetic support to the women in using menstrual cups. These findings suggest that mass in-depth awareness programmes for nurses and other health professionals should be organised and support groups need to be created to provide adequate information and counselling to the public regarding the use of menstrual cups.

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Conflict of interest: None declared

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