Original Article

Determinants and the Correlates of Menstrual Cup usage among Medical Students in a Tertiary Care Hospital in Puducherry

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Abstract

Introduction: Adolescence is the period between 10-19 years of life and about 1/5th total female population in the world are adolescent girls who requires specific and special attention. Menstruation is a unique phenomenon happening at this age which has lots of social stigma attached to it. It affects the physical, mental and social functioning of any teenager which is of greater concern in order to prevent any major disorder of sexual and reproductive health in future.

Objectives: To determine the prevalence of usage of menstrual cup among medical students and to determine the barriers and facilitators regarding the use of menstrual cup and finally to estimate the knowledge and practises and its association with various determinants of menstrual cup.

Methods: This study was a analytical cross sectional study conducted among the female medical students of a private medical college in Pondicherry. The study tool was a Google form comprising the socio demographic details of the study participant and the details regarding the usage of menstrual products especially menstrual cup. This study followed the universal sampling method and a total of 328 students responded. The responses were downloaded in the Microsoft excel and analysed using the SPSS version 21.

Results: Out of the total 328 study participants 54.9% belonged to the age group of 18-23 years, 45.1% were in age group of 24-27 years. Of these 62% were I – III years, 37.8% were IV- CRRI, these students resided in all the types of families, such as 42.1% in the nuclear type, 57.9% in the three-generation type and the joint family. The knowledge prevalence of menstrual cups was 42% among the study participants. The prevalence of the usage of menstrual cups was 41.5%. The logistic regression model showed statistical significance with age (OR=5.078, p = 0.003). Students aged 18 to 23 were 5.078 times more likely to face barriers to using menstrual cups than those aged 24 to 27. Furthermore, increasing age was associated with a decrease in the likelihood of barriers to usage. Those in lesser years of study were 12.086 times more likely to have a barrier.

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Conclusion: From this study its evident that literacy about a concept plays a key role in adapting to a new change. Thus behaviour change communication has to be the key strategy in formulating the change in behaviour to convert theory into practise.

Key Words: Medical students, menstrual hygiene, menstrual cup.

Introduction

Adolescence is the period between 10-19 years of life and about 1/5th total female population in the world are adolescent girls who requires specific and special attention. Menstruation is a unique phenomenon happening at this age which has lots of social stigma attached to it. [1,2] It affects the physical, mental and social functioning of any teenager which is of greater concern in order to prevent any major disorder of sexual and reproductive health in future.It is a normal physiological process which is addressed with enormous cultural and social taboos which is traumatising to the teenage girl. This adolescent period in any girl is fallen prey to the societal perspectives and subjective opinions of the community.[3,4]Although menstruation is a normal physiology is has various influences in sexual and reproductive health of the girl who becomes the future women hood of a society. Women having a higher knowledge regarding menstrual hygiene and safe menstrual practices are less prone to reproductive tract infections and its consequences. In the contrary girls with less knowledge and attitudes leading to unhygienic menstrual practices are prone for a lot of reproductive tract infections and can lead to infertility in future. This study focuses on the new menstrual hygienic practises that is introduced in the market and how far it is accepted among the student population. Hence an initiative was taken to determine the prevalence of usage of menstrual cup among medical students and to determine the barriers regarding the use of menstrual cup and to assess the facilitators regarding its usage and finally estimate the knowledge and practises about the menstrual cup and its associations. This study was aimed mainly to determine the knowledge regarding the newer sustainable menstrual cup among medical fraternity who will disseminate the utility to the public and bridge the knowledge and practise gap.

Aims and Objectives:

1. To determine the prevalence of usage of menstrual cup among medical students.
2. To determine the barriers and facilitators regarding the use of menstrual cup.
3. To estimate the knowledge and practises regarding the use of menstrual cup.
4. To evaluate the association with various determinants about the menstrual cup.

Methods

This study was a analytical cross sectional study conducted among the female medical students of a private medical college in Pondicherry. The study protocol was designed and conceptualised and presented to the Institutional Ethical Committee and approval was obtained on 12/4/22 with IEC no/C-P/6.The study tool was a structured ,pre validated and pre tested questionnaire which was converted into the Google forms and circulated among the medical students through whats app and e mail. The study tool has four parts comprising the socio demographic details of the study participant and the details regarding the usage of menstrual products especially menstrual cup, its utility, knowledge regarding it and the attitude and practises of sustainable menstrual hygienic practices. The facilitators and barriers regarding the usage of menstrual cup were also assessed with respective questions. The data was collected by sending the link of the questionnaire through Google link. This study followed the universal sampling method and thus all the participants who are willing to participate were included in the study. The main purpose of this study was to assess the knowledge regarding the newer sustainable menstrual cup and so all the female medical students of the college were included. The basis of sample size was derived from the study by Manorama et al [5] which showed a prevalence of knowledge of menstrual hygienic practises among adolescents as 70.4%% and 5% of absolute precision of prevalence, the sample size was derived to be 328 considering the non response rate and attrition also. The participants were explained about the study protocol and procedure of the study and the willingness was obtained with the help of participant

information sheet and informed consent forms. Then the research was carried out with the help of Google forms. The participants included all the female M.B.B.S students across all the four academic years and the those students who were undergoing internship. The responses were downloaded in the Microsoft excel and analysed using the SPSS version 21. The results were presented in descriptive and inferential statistics. The categorical variables were expressed as frequency and percentages and the continuous variables were converted into class intervals and presented as frequency and percentages. Chi square test was used to see for any association between users and non-users. Logistic regression analysis was done to ascertain the effects of age, year of study, Type of family, and knowledge of menstrual cups on the likelihood that respondents had barriers to usage of menstrual cups.

Results

Out of 328 female medical students, 54.9% belonged to the age group of 18–23 years, and 45.1% were in the age group of 24–27 years. Of these, 62% were I – III years, 37.8% were IV- CRRI, these students resided in all the types of families, such as 42.1% in the nuclear type, 57.9% in the three-generation type and the joint family. The knowledge prevalence of menstrual cups was 42% among the study participants. The prevalence of the usage of menstrual cups was 41.5%

Table 1: Baseline characters of the study participants (N=328)

VARIABLE	CATEGORY	FREQUENCY n(%)
AGE (YEARS)	18-23	180(54.9)
	24-27	148(45.1)
Year of Study	I Year – III year	204(62.2)
	IV year - CRRI	124(37.8)
Type of family	NUCLEAR FAMILY	138(42.1)
	OTHERS	190(57.9)
Usage of menstrual cup	YES	**136(41.5)**
	NO	192(58.5)
Knowledge of menstrual cup	YES	138(42.1)
	NO	190(57.9)

(Table 1).All the participants who are currently using menstrual cups were using sanitary pads previously. An average amount of around Rs.500 to Rs.1000 to the menstrual hygienic products per month. Those participants who did not use menstrual cup gave the following reasons as barriers in using the menstrual cup like pain (32%), fear of leakage in 44%, socio cultural hindrances 13%,difficulty in insertion 10%, and inability to maintain the hygiene in 1%.These were the main barriers addressed and brought out by this study . About 21% cited that they were able to insert it correctly only after about five trials. This showed the trial and error method of insertion of the menstrual cup. Out of the users, about 42% have advised others to use it. Only about 47% of the users used it in a public restroom. (Figure 1). The non users of menstrual cup stated the most common factor which enhanced the usage of other products like sanitary pads and cloth were the ease of use sanitary pad(71%). easy availability (24%), and easy to maintain the hygiene(5%). The non users of menstrual cup told that they will use it in future (36%) after trying out the new method. The primary reasons for switching from other menstrual products to menstrual cups, according to the students, were that they were more environmentally safe, cost effective, more comfortable, less likely to cause rashes.(Figure 2).

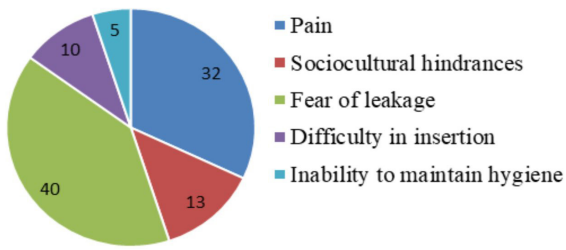

Figure 1: Barriers in using the menstrual cup

Participants who did not use menstrual cups cited the following reasons as barriers to use: pain (32%), fear of leakage (40%), sociocultural barriers (13%), difficulty with insertion (10%), and inability to maintain hygiene (1%). These were the primary barriers addressed and highlighted by this study.

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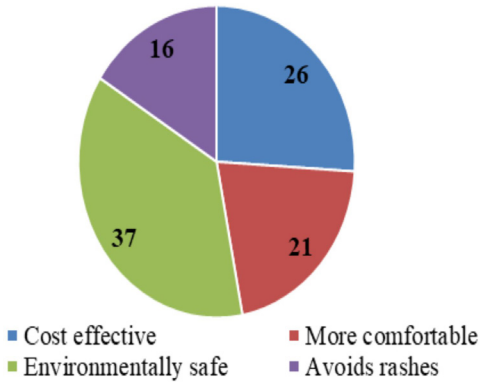

Figure 2: Reasons for shifting to menstrual cup

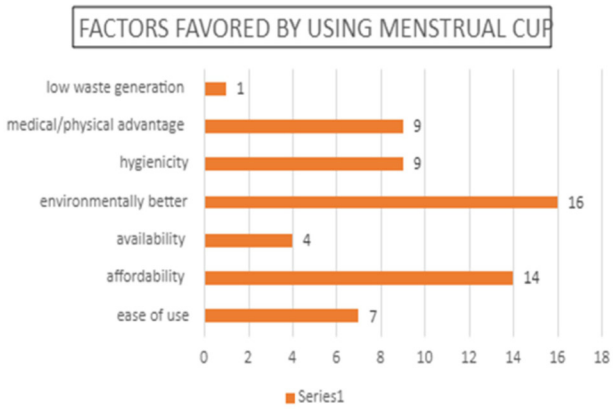

Fig 3: Distribution of factors favouring the usage of the menstrual cup

From the Figure 3 it is clear that the various factors which are facilitators for usage of menstrual cup are environmental friendly nature of it, affordability, ease of usage ,hygienic and low waste generation which is the need of the hour for sustainable development of the society.

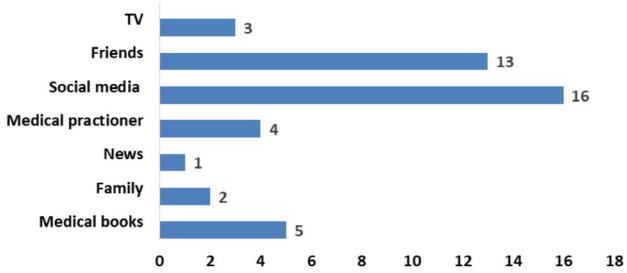

Figure 4 represents that 16% responded their source of information regarding menstrual cup as social media, 13% as friends, 5% as medical books and from other sources of information.

Table: 2 The Level of Association

There was a statistically significant association between age group and barrier in the usage of the menstrual cup (p-value<0.05). There was an association found between the year of study (YOS) of the respondents and its barrier. Data show that IV and CRRI students have a better understanding than students in lower years of study. Participants who resided in the nuclear family had more barriers when compared to other type of family's students. There was also an association between Knowledge of menstrual cup and its barrier in usage (p-values=0.000).

Table 2: Association between barriers and its usage

Variable	Category	Barriers		P value
		Present	Absent	
Age (years)	18-23	136(70.8)	44(32.4)	0.000
	24-27	56(29.2)	92(67.6)	
Year of Study	I Year – III year	162(84.4)	42(30.9)	0.000
	IV year - CRRI	30(15.6)	94(69.1)	
Type of family	Nuclear family	40(20.8)	98(72.1)	0.000
	Others	152(79.2)	38(27.9)	
Knowledge of menstrual cup	Yes	38(19.8)	100(73.5)	0.000
	No	154(80.2)	36(26.5)	

Table 3: Regression analysis on barriers in using the menstrual cup

Variable	Odds Ratio	95% C.I for Exp (B)		P value
		Lower	Upper	
Age	5.078	3.157	8.168	0.001
Year of Study	12.086	7.092	20.595	0.000
Type of family	9.800	5.876	16.344	0.000
Knowledge of menstrual cup	0.089	0.053	0.150	0.000

Table 3: Logistic regression analyses were performed to ascertain the effects of age, year of study, Type of family, and knowledge of menstrual cups on the likelihood that respondents had barriers to usage of menstrual cups. The logistic regression model showed statistical significance with age (OR=5.078, p = 0.003). Students aged 18 to 23 were 5.078 times more likely to face barriers to using menstrual cups than those aged 24 to 27. Furthermore, increasing age was associated with a decrease in the likelihood of barriers to usage. Those in lesser years of study were 12.086 times more likely to have a barrier. Students in nuclear families faced 9.800 times more barriers than other types of families. Less knowledgeable students faced greater obstacles when attempting to use it.

Discussion

In this study were 328 participants responded, the knowledge prevalence of menstrual cup was 42%. The prevalence of usage of menstrual cup was 41.5%. All the participants who are currently using cups were using sanitary pads previously. This showed the acceptance of a new method is not very easily possible even in a highly educated group. Average amount spent was around Rs.500 to Rs.1000 per month. Those participants who did not use menstrual cup felt that it caused pain (32%), there was a fear of leakage in 44%, socio cultural hindrances 13%,there was a difficulty in insertion 10%, inability to maintain the hygienicity in 1%. These were the hindering factors that was brought out by the study to use a new modality .About 21% cited that they were able to insert it correctly only after about five trials. So the easy ease in use of any new method is possible only after certain trial and error policy which is dependent on the individual level of proficiency. Out of the users, about 42% have advised others to use it. Even the users didn't disseminate the knowledge to the fullest .Only a proportion was happy enough to share their experiences to others and cultivate the habit of knowledge dissemination. Only about 47% of the users used it in a public restroom. The non users of menstrual cup stated the most common factor was the ease of use sanitary pad(71%).easy availability (24%), and easy to maintain the hygiene(5%).These were some facilitators to the usage of other products like sanitary pads and clothes.The non users of menstrual cup told that they will use it in future (36%). In a study conducted by A Dasgupta and M Sarkar[5,6]showed that 11.25% of girls used sanitary pads, 48.75% girls used cloth pieces, and 40% girls used both sanitary pads and cloth pieces. None of the girls used any other product of menstrual hygiene. In a study conducted by Sharjeea Arshad Ali et al [7] significantly lower number of females from general population were found to be aware of tampons and menstrual cup (15.9 and 11.4% respectively). It was seen that the most important criteria while choosing a menstrual hygiene product was the comfort for disposable sanitary pads (31.3%) and custom fit for menstrual cup (50.7%).[8] In their study 89% females used pads and 1.6% used menstrual cup. This was in contrast to our study where the prevalence of menstrual cup was more, because medical students are well informed about the advantages and disadvantages about any new advancement in medical field. So this platform should be used by the students to inform the public about the sustainable menstrual practises and its utility to provide a safe and healthy environment. These environment friendly modalities should made available at a low cost and ease to use. Similarly in our study among reproductive age medical students, it was seen that 95% used sanitary pads and their most important criteria for choosing pads was comfort and ease of use (71%). In a study conducted by DikshaPokhrel et al [6]among

13–19-year-old females in Nepal most participants found the menstrual cup easy and convenient to use (67%) and found it economically and environmentally advantageous(45%). In a systemic review and meta-analysis study conducted by Anna Maria Eijk et al [7,9,10]on Menstrual Hygiene Management Among Adolescent Girls in India reported that 73% wished to continue the use of menstrual cup after switching from their previous menstrual hygiene product. Thus the menstrual hygiene products and awareness depends on the individuals' perspectives and socio cultural surroundings that favours or hinders the usage of any product or practise. This new sustainable product will prevent the development of sexual and reproductive tract infections in the adolescents due to the durability and sanitary method of usage. So much insight has to be tailored to the advancement in the knowledge dissemination regarding the sexual and reproductive health and safe and durable and sustainable practises and products.

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