

Breaking the Taboo: A Study on the Experiences and Effects of Menstrual Cup Use Among Female College Students in Kerala

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ABSTRACT

Menstrual hygiene is a critical aspect of women's health that often encounters socio-cultural and economic barriers, especially among college students. Traditional menstrual products like pads and tampons present several issues including environmental impact, health risks, and financial burdens. Recently, menstrual cups have emerged as a sustainable alternative, yet comprehensive studies on their impact among college students are scarce.

This study aims to fill the research gap by examining the adoption, experiences, and effects of menstrual cup use among female college students in Kerala, India. It investigates the socio-cultural, economic, and individual factors influencing menstrual cup use and explores the barriers to its adoption. The study employed a mixed-methods approach, including surveys and focus groups, among female college students aged 18 to 25 who are current or past users of menstrual cups. Key variables examined include the acceptance of menstrual cups, economic benefits, environmental impact, health implications, and the influence of public awareness and cultural attitudes. Preliminary findings suggest a positive reception towards menstrual cups due to their cost-effectiveness and environmental benefits. However, barriers such as lack of awareness, cultural stigmas, and accessibility issues persist. The study also highlights the role of educational interventions in improving menstrual hygiene practices. This study underscores the potential of menstrual cups to enhance menstrual hygiene management among young women in Kerala, offering insights into the factors that facilitate or impede their adoption. It suggests that increased public education and policy interventions are essential to foster a more receptive environment for sustainable menstrual products. By contributing to the limited literature on menstrual cups in a developing region with high social indices like Kerala, this research provides valuable insights for healthcare providers, educators, and policymakers aiming to promote better menstrual health practices and sustainable solutions.

INTRODUCTION

Menstrual hygiene is an essential aspect of women's health, but it is a significant challenge for most, especially college going students. Traditional menstrual products such as pads & tampons can cause economic, environmental, and health issues. In recent years, menstrual cups have emerged as a sustainable and cost-effective alternative to counter these challenges.

However, research on the impact of menstrual cups specifically among college students is limited. This study will try to fill this gap by examining the impact of menstrual cups on college students, its acceptance, economic implications, environmental benefits, health implications, and adoption barrier and the user experiences.

Women should receive more attention in the theme of women's health through menstrual hygiene. It is not only

the numbers of people who resorted to the use of conventional period products such as tampons and pads have increased but also those who used menstrual cups. In addition, the exploration of college students using menstrual cups in Kerala, India, is a very limited study.

Results of menstrual cup usage among college students in Kerala is seen as an interesting case study because of its social indices like literacy rate, progressive outlook and so on. Awareness can help in the improvement of good menstrual health practices and showing that the menstrual health practice is maintainable.

This work centres on the multiple factors that affect girls in their usage of menstrual cups in Kerala. The goal of the study is to shed light on the causes, barriers and preferences of the community in question with respect to menstrual cups by looking at the socio-cultural, economic and individual factors.

Cultural impressions of menstruation, availability and cost of menstrual products, educational campaigns, public awareness of menstrual hygiene and personal views about the issue are very important issues for this study. The focus of this research is on the aforementioned factors in the socio-cultural context of Kerala. The study however intends to provide teachers, health care givers and policy makers with questions that could allow them to improve the menstruation health condition of college students in this locality.

Importance of the study

It is definitely impossible to overestimate the importance of finding out how menstruation cups use affects female college students in Kerala. Despite being widely ignored or stigmatized, managing menstrual hygiene is an important part of women's health. Improving menstrual health behaviours among young women can be greatly aided by an understanding of the implications of menstrual cups. By learning more about this subject, we can help women make decisions that will improve their health by spreading the possible advantages, difficulties, and the ramifications of using menstruation cups.

Scope of the study

Female college students in Kerala, India, between the ages of 18 and 25, who either are presently using or have previously used menstrual cups, will participate in this study. By use of questionnaires, direct interviews, and focus groups, we will investigate their perspectives, experiences, and attitudes on the use of menstruation cups. The rationale behind menstruation cup selection, difficulties experienced during use, advantages seen, and overall satisfaction levels will be important research topics. We will also look at cultural views, socio-economic position, and access to menstrual health education as factors that affect the adoption of these menstrual cups. The results of this study will add to the body of knowledge which is already available on managing menstrual hygiene and be a useful tool for legislators, medical professionals, educators, and advocacy organizations working to empower women and promote menstrual health.

Review of Literature

(Valiyakath & Maliakkal, 2023): A study “Market analysis and factors influencing the preference towards usage of menstrual cup”. The menstrual cups are a matter of choice for females; a research from Kerala covers the issue. Even though the majority of the women knew about cups, the question of using them, and how comfortable they are was still a controversial issue among them. The factors which were evaluated by us as a criterion of liking a certain brand were reusability, environment friendliness, and health benefits, respectively. As the report highlights, the main issues are being eliminated and a higher menstrual cup use will drive when the education is focused on rural people mostly.

(Abraham et al., 2023): A study “Knowledge, Acceptability and Misconceptions Regarding menstrual cup among college students of Kerala”. The main challenge was irked because of a survey among the students from college Kerala. They said that they had already been aware of menstrual cups, however, the only few had enough knowledge and less percentage of them were applying to use them. During the experiment, a lot of the participants encountered such false myths as considering the process very painful which seemed to be among the obstacles on

their paths. The study seeks to furnish education thus people will be able to know more of the matter and also be obliged to follow it desperately.

(Durairaj et al., 2024): A Study “Utilization of modern menstrual methods and related unmet needs among college going women in Coimbatore district” A survey of college women from Tamil Nadu, India showed that only 1.4% of them followed the modern method, sanitary pads being the most preferred choice. However, the main unmet needs comprised safety, mostly pertaining to transport and disposal, mainly outside. Age, place of residence and parents’ educational level are socio-demographic variables that have mainly influenced the adoption of modern menstrual hygiene measures. The study showcases the fact that women students in college require personalized and clear communication for implementing a fair approach in menstrual health products and information.

(Gölbaşı Koç et al., 2023): A study “Use of menstrual cup and awareness of environmental effects of menstrual hygiene products” According to this study, menstruation cup users are typically more environmentally conscious than those who utilize throwaway goods. Users of cups performed better on a "green" knowledge test, according to a poll. You seem to learn more about the environmental effects of menstrual items the longer you use a cup or the more environmentally conscious you are.

(Mouhanna et al., 2023): A study “Menstrual hygiene with less environmental impact” The research given evidenced that the most cause of menstrual waste relates to the disposable menstrual products. Menstrual cups, i.e. reusable ones, are a good option which helps personal expenses to be not so high and, at the same time, make the environment less polluted. The insertion of menstrual cups into the vagina for contraceptive purposes is a safe and dependable method since most medical specialists have knowledge that they can use in counselling the patients before they can start using the cups.

(Flamand, 2018): A study on “The menstrual cup affect-an environmental impact analysis of four menstrual products and a menstrual waste scenario analysis of increasing future menstrual cup use” Moreover, cups, pads and tampons are also the subject of the other part of the study, that analyses their environmental impact. The results of Gorelick and the authors revealed that menstrual cups will just be able to contribute in the elimination of all the regions they considered, but this will be done by only reducing the produced waste by 84%. The main point of the preceding paragraph is that it is not only disposable items like sanitary napkins which lead to pollution but also a few other things which we usually neglect. (Van Eijk et al., 2019): A study on “Menstrual cup use, leakage, acceptability, safety, and availability: a systematic review and meta-analysis” This study find the cup is more suitable and its work to protect the leakages and other issues (Warashinta et al., 2021): A study “The use of menstrual pad, tampons, and menstrual cup during menarche” The researcher compared tampons, menstrual cups, and sanitary napkins in his study which would be used during menstruation. Menstruation cups turned out to be the best hygiene, welfare, and ecology wise solution. The present study needs to be replicated on a larger population to substantiate the findings.

Research methodology

Variables of the study: The independent variable for the study was identified as “use of menstrual cup” and the dependent variable of the study is “impact of using menstrual cup”.

Objectives

- To explore the factors that influence the preference of menstrual cups among the college students.
- To identify the problems faced by college students regarding menstrual cups usage.
- To identify the environmental impact of menstrual cups compared to traditional menstrual products.
- To understand the attitudes of the family and friends towards the usage of menstrual cups.

Hypothesis

- Ho: Menstrual cup usage is not preferred by female college students.
- H1: Menstrual cup usage is preferred by female college students.

- Ho: Female college students face problems while using menstrual cups.
- H1: Female college students face no problems while using menstrual cups.
- Ho: Menstrual cup causes environmental impacts compared to traditional menstrual products.
- H1: Menstrual cup causes no environmental impacts compared to traditional menstrual products.
- Ho: Family and friends have a negative attitude towards the usage of menstrual cups.
- H1: Family and friends support the use of menstrual cups.

Research Design

The study is designed as a Quantitative study, aiming to identify the impact of using menstrual cups in college students

Population

The population of this research is female college going students using menstrual cups.

Method of sampling

The researcher has used convenience and snowball sampling to collect the data from the respondents. Since there was no sample frame for female college students who are using menstrual cups, probability sampling was not able to be conducted. Therefore, non-probability sampling is used. Female college students using menstrual cups were identified through personal contacts. Then they collected other respondents with whom they were familiar.

Sample Size

The Sample Size is 90 students.

Data collection

Quantitative research techniques are used for the data collection process. The primary data were collected from the college going students using a questionnaire. Likert scale is used to measure the data. The secondary data were collected from published articles and works.

Tools of analysis

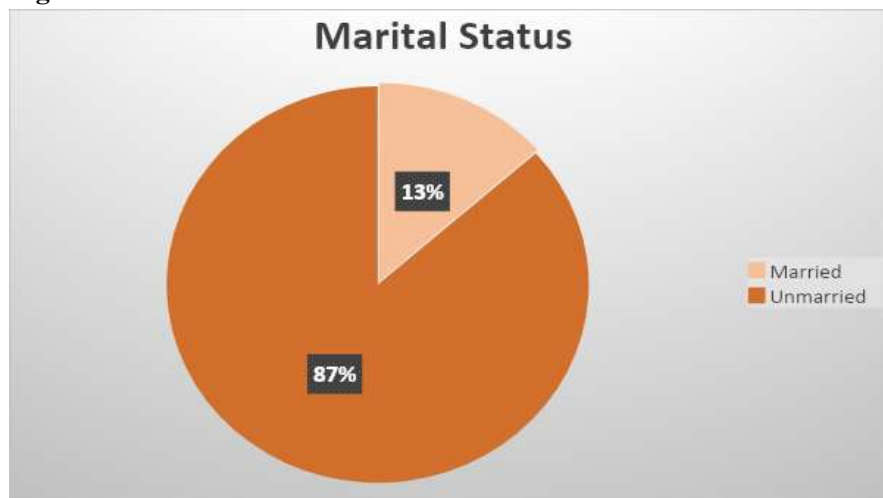
Descriptive analysis and inferential analysis tools are used for the research. Independent T-tests were used for finding the difference between demographic factors and the variables, and correlation and regression analysis were used for finding the relationship between 2 variables. Tools like Crosstab are also used for finding the difference between 2 demographic factors. Frequencies, mean and standard deviation are used to analyse the descriptive data.

Data analysis and interpretation

Descriptive analysis

The demographic factors like age, marital status and income of the respondents are in the following figures and tables.

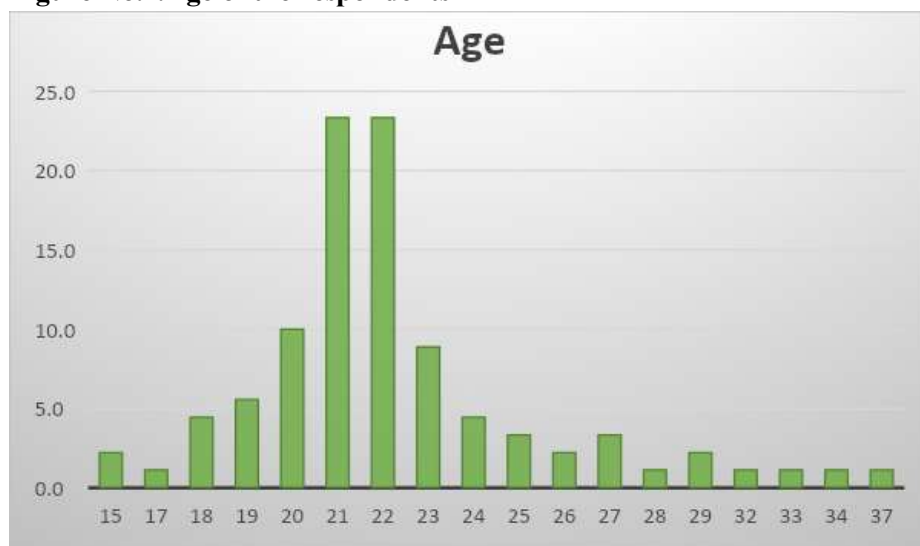
Figure No.1. Marital Status



Interpretation:

Figure No 1 shows the marital status of the respondents. 87% of the respondents are Unmarried and 13% of respondents are married.

Figure No.2.Age of the respondents



Interpretation:

Figure No 1 shows the age of the respondents. 23% of respondents are 21 and 22 aged group.

Table No 0.1. Income of the respondents

Income	Frequency	Percent
0	65	72.2
1200	1	1.1
10000	3	3.3
12000	1	1.1
20000	2	2.2

36000	1	1.1
42000	1	1.1
50000	4	4.4
60000	1	1.1
100000	5	5.6
150000	1	1.1
210000	1	1.1
240000	2	2.2
300000	2	2.2
Total	90	100.0

Interpretation:

Table No 0.1 shows the results of the income of the respondents.72% of the respondents are students.

Table No 1.1. Awareness regarding use of menstrual cup

Awareness		
	Frequency	Percent
No awareness	61	67.8
Aware of	29	32.2
Total	90	100.0

Interpretation:

Table No.1.1 shows the result of awareness regarding use of menstrual cup. 32.2%of the respondents have the awareness of using a menstrual cup. 67.8% of the respondents have no awareness of using a menstrual cup.

To know the variance with regards to awareness of menstrual cup and preference of using menstrual cup, an independent sample t test is conducted.

Table No.1.2 preference of using menstrual cup and awareness

Group Statistics									
Prefere nce of using menstr ual cup	Aware ness	N	Mean	Std. Devi ation	F	Sig.	t	df	Sig. (2- tailed)
	No aware ness	61	3.701 6	.536 19	.53 4	.46 7	- 2.5 80	88	.012
	Aware of	29	4.048 3	.706 41			- 2.3 41	43.9 02	.024

Interpretation:

Table No 1.2 shows the result of the independent sample t test. It shows the difference between the aware and no awareness regarding the preference of using a menstrual cup. Here the p value is higher than 0.05(.012) so we reject the null hypothesis that there is a significant difference in the preference of using menstrual cups and awareness.

Table No.2.1 Duration of menstrual cup use

How long have you been using? * preference recoded Cross tabulation						
			Preferences			Total
			Low preference	Moderate preference	High preference	
How long have you been using?	Less than 6 months	Count	19	29	16	64
		% within How long have you been using?	29.7%	45.3%	25.0%	100.0%
		% within preference recoded	79.2%	72.5%	61.5%	71.1%
		% of Total	21.1%	32.2%	17.8%	71.1%
	6 months to 1 year	Count	3	2	6	11
		% within How long have you been using?	27.3%	18.2%	54.5%	100.0%
		% within preference recoded	12.5%	5.0%	23.1%	12.2%
		% of Total	3.3%	2.2%	6.7%	12.2%
	1 year to 2 year	Count	0	7	3	10
		% within How long have you been using?	0.0%	70.0%	30.0%	100.0%
		% within preference recoded	0.0%	17.5%	11.5%	11.1%
		% of Total	0.0%	7.8%	3.3%	11.1%
	More	Count	2	2	1	5

	than 2 year	% within How long have you been using?	40.0%	40.0%	20.0 %	100.0 %
		% within preference recoded	8.3%	5.0%	3.8%	5.6%
		% of Total	2.2%	2.2%	1.1%	5.6%
Total	Count		24	40	26	90
	% within How long have you been using?		26.7%	44.4%	28.9 %	100.0 %
	% within preference recoded		100.0%	100.0%	100.0 %	100.0 %
	% of Total		26.7%	44.4%	28.9 %	100.0 %

Interpretation:

Table No.2.1 shows the result of the cross tab between Duration of menstrual cup use and the preference of using menstrual cup. Most of the respondents have been using menstrual cup for 6 months. 45.3% of the respondents are moderately preferring to use menstrual cup. 54.5% of respondents using from 6 months to 1 year, may prefer menstrual cup. The preference of using menstrual cup has been decreasing over the years. The respondents who are using it for more than 2 years show decreased preference for it.

Inferential statistics

The impact of using menstrual cup among female college students is analysed here:

Objective 1. Preference of menstrual cups usage among the college students.

Table No 3.1. Preference of menstrual cups usage.

Descriptive Statistics					
Menstrual cup usage.	N	Minimum	Maximum	Mean	Std. Deviation
Preference of using menstrual cup.	90	1.40	5.00	3.81	.61

Interpretation:

Table No. 3.1 shows the result of the mean score for the preference of menstrual cup usage among female college students. (M=3.81, SD=.61). There will be a high influence of using menstrual cup.

To know the variance with regards to the marital status and preference of using menstrual cup, independent sample t test is conducted.

Table No 3.2. Marital status of the respondents and Preference of using menstrual cup.

Preferen ce of using menstrua l cup.	Group Statistics								
	Marital status	N	Mean	Std. Deviat ion	F	Si g.	t	df	Sig. (2- taile d)
	Married	12	3.816 7	.430	1 .8 0	.1 82	.0 20	88	.984
	Unmarri ed	78	3.812 8	.640			.0 27	19 .4	.979

Interpretation:

Table No 3.2 shows the result independent sample t test. It shows the difference between the married and unmarried regarding the preference of using menstrual cup. Here the P value is higher than 0.05(.984) so we accept the null hypothesis that there is no significant difference in the preference of using menstrual cup among the married and unmarried female students.

Objective 2. Challenges faced by college students regarding menstrual cups usage.

Table No.4.1. Challenges faced by college students regarding menstrual cups usage.

Challenges faced when using menstrual cups Frequencies				
Impact menstrual cup usage.		Responses		Percent of Cases
		N	Percent	
Challeng es faced when using menstrual cups	Leakages	8	7.5%	8.9%
	Discomfort	25	23.6%	27.8%
	Public restrooms	42	39.6%	46.7%
	Pain during use	31	29.2%	34.4%
Total		106	100.0%	117.8%

Interpretation:

Table shows the challenges faced when using menstrual cups. 46% of respondents have the difficulties to find using public restrooms. 34% of the respondents have pain during the use of menstrual cup. 27% of the respondents were discomfort to the use of menstrual cups and only 8.9% of the respondents are faced leakages.

Table No.4.2. Marital status of the respondents and challenges faced when using menstrual cups.

Challeng es faced	Marital status	N	Me an	Std. Deviati on	F	S i g .	t	df	Sig. (2- tailed)
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	Married	12	2.65	.391	.6	.4	-	88	.642
	Unmarried	78	2.71	.459	.5	.25	-	16	.607

Interpretation:

Table No 4.2 shows the independent sample t test between the problems faced by college students regarding menstrual cups usage and marital status. Here the P value is higher than 0.05(.642) so we accept the null hypothesis that there is no significant difference in the problems faced by college students regarding menstrual cups usage and marital status.

Objective 3. Environmental impact of menstrual cups compared to traditional menstrual products.

Table No.5.1. Environmental impact of menstrual cups compared to traditional menstrual products.

Descriptive Statistics					
Environmentally friendly	N	Minimum	Maximum	Mean	Std. Deviation
	90	2.00	5.00	4.08	.66

Interpretation:

Table No.5.1. Shows that the Result of the mean score. The respondents say that menstrual cups are eco-friendly. (M=4.08, SD=.66).

To know the variance with regards to the marital status and response to menstrual cups is eco-friendly, independent sample t test is conducted.

Table No.5.2. Marital status and response to menstrual cups is environmentally friendly.

	Marital status	N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Environmentally friendly	Married	12	4.00	.603	1.04	.309	-.496	88	.621
	Unmarried	78	4.10	.675			-.539	158	.597

Interpretation:

Table No 5.2 shows the independent sample t test between married and unmarried with regard to environmentally friendly nature of the menstrual cups. Here the P value is higher than 0.05(.621) so we accept the null hypothesis that there is no significant difference in the response to menstrual cups is environmentally friendly and marital status.

Objective 4. Attitudes of the family and friends towards the usage of menstrual cups.

Table No.6.1. Attitudes of the family and friends towards the usage of menstrual cups.

Descriptive Statistics					
Family and friends support	N	Minimum	Maximum	Mean	Std. Deviation
	90	1.00	5.00	2.70	1.12

Interpretation:

Table No.6.1. Shows the Result of the mean score. The respondents believe that friends and family provide moderate degrees of support. (M=2.70, SD=1.12). There will be a positive attitude for family and friends toward the usage of menstrual cups.

To know the variance with regards to the marital status and Family and friends support, an independent sample t test is conducted.

Table No.6.2. Marital status of the respondents and Family and friends support.

	Family and friends support	N	Mean	Std. Deviation	F	Sig.	t	df	Sig. (2-tailed)
Marital status	1.00	16	1.75	.447	1.245	.272	-.566	37	.575
	2.00	23	1.83	.388			-.552	29	.585

Interpretation:

Table No.6.2 shows the independent sample t test between the marital status of the respondents and Family and friends support. Here the P value is higher than 0.05(.575) so we accept the null hypothesis that there is no significant difference in the Family and friends support while using menstrual cup and marital status.

Table No.7. Preference of using menstrual cups, environmentally friendly and cup is cheaper as compared traditional menstrual product

Correlations			
Variables		Preference of using menstrual cup	
Menstrual cup is cheaper as compared traditional menstrual products.	Pearson Correlation	.588**	
	Sig. (2 tailed)	.000	
	N	90	
Environmentally friendly	Pearson Correlation	.542**	
	Sig. (2 tailed)	.000	

	N	90
**. Correlation is significant at the 0.01 level (2-tailed).		

Interpretation:

Table No. 7 shows the result of correlation test between preference of using menstrual cups, environmentally friendly and cup is cheaper as compared to traditional menstrual product. Here in the case of preference of using a menstrual cup and cup is cheaper as compared to traditional menstrual product, the P value is less than 0.005(.000) so we can reject null hypothesis and accept alternative hypothesis. There is a significant relation between preference of using menstrual cup and cup is cheaper as compared to traditional menstrual products. In the case of environmentally friendly nature of the cup and preference using menstrual cup, the P value is less than 0.005(.000) so we reject the null hypothesis and accept the alternative hypothesis. There is a significant relation between environmentally friendly nature of the cup and preference using menstrual cup.

Table No.8. Preference of using menstrual cup and eco-friendly.

Model Summary			
Model	R	R Square	Adjusted R Square
1	.542 ^a	0.294	0.286
a. Predictors: (Constant), environmentally friendly			

Interpretation:

Table No.8 shows the result of a regression test between Preference of using menstrual cup and eco-friendly. Here 28.6% of respondents prefer menstrual cup because they are environmentally friendly.

Table No.9. Preference of using menstrual cups and cheap rates.

Model Summary		
R	R Square	Adjusted R Square
.588 ^a	0.346	0.338
a. Predictors: (Constant), cheap rate		

Interpretation:

Table No.9 shows the result of a regression test between preference of using menstrual cups and cheap rate. Here 33.8% of respondents prefer menstrual cups because of its cheaper rate.

Findings

- Most of the respondents are unmarried.
- 23% of respondents are 21 and 22 aged group.
- The awareness of menstrual cups is less but many of the respondents used menstrual cup. 32.2% of the respondents have the awareness of using a menstrual cup. 67.8% of the respondents have no awareness of using a menstrual cup.
- The preference of using a menstrual cup has decreased over the years.

- The respondents have been using a menstrual cup for 6 months. 45.3% of the respondents are moderately preferring to use a menstrual cup.
- The preference for using menstrual cup among the Female college students is high.
- The highest challenge faced when using menstrual cups is to find using public restrooms. 34.4% of the respondents have pain during the use of menstrual cup. 27% of the respondents were discomfort to the use of menstrual cups and only 8% of respondents faced leakage while using menstrual cups.
- The respondents say that menstrual cups are environmentally friendly.
- The support from friends and family regarding the use of menstrual cup is moderate.
- The result of a regression test we find the menstrual cup is eco-friendly and cheap rated.
- Cheaper rate of the menstrual cup and environment friendly nature of the menstrual cup lead to preference of using menstrual cup.
- 28.6% of respondents prefer menstrual cup because they are eco-friendly.
- 33.8% of respondents prefer menstrual cups because of its cheaper rate.

Suggestions

- Provide more public restroom in our society for women.
- Strategies to reduce pain while using menstrual cup need to be improve.
- Awareness of using menstrual cups should be part of the education syllabus.
- Health care workers should promote the use of menstrual cup.
- The government may implement plans to provide free sanitary products, especially menstrual cup.
- Menstrual cup can be marketed by its manufacturing companies towards younger women to promote their usefulness.

Limitation of the study

- Limited number of users.
- Limited number of respondents.
 - Some of the members of the population were not interested in sharing their opinion.

Conclusion

The findings help to understand the potential benefits of menstrual cups and its impact on menstrual hygiene practices among young women. It provides a cheaper, eco-friendly, and more comfortable alternative to the traditional menstrual products. Despite the positive attitude of students towards it, certain barriers to adoption and challenges were found, specifying the need for better promotion, acceptance and usage. So, it should be properly marketed and plans have to be implanted by the government to make it easily accessible to women.

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