

Rethinking Menstrual Hygiene: The Environmental and Health Benefits of Menstrual Cups

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Abstract- “Menstruation is not a problem, poor menstrual hygiene is. Let's break the taboo and talk about menstrual health openly”. As per UNICEF, 1.8 billion people across the world menstruate, and nearly 113,000 tons of menstrual waste are generated from India independently. A questionnaire was used as the primary data collection tool, collecting 102 responses and secondary data such as magazines, articles, and journals. For a comprehensive evaluation, the data was assessed using percentage calculations, pie charts, and bar graphs. A lack of awareness, insufficient guidance, and knowledge remain major obstacles to adopting better menstrual products. Moreover, cultural biases, societal stigma, and fears surrounding their use further discourage this transition to better menstrual products. Many people use sanitary pads during menstruation, but improper usage or disposal can lead to issues like rashes, infections, and environmental harm. Menstrual cups, on the other hand, are reusable, medical-grade silicone devices designed to collect menstrual blood. They are cost-effective, eco-friendly, and safer when used correctly, making them a sustainable alternative. As the awareness and access to menstrual cups will increase, menstrual cups could become a cornerstone of menstrual hygiene which will improve health outcomes and reduce environmental waste for generations to come.

Keywords: *Menstrual cup, menstrual hygiene, Modern menstrual products*

INTRODUCTION

Menstruation or menses is the natural bodily process of releasing blood and associated matter from the uterus through the vagina as part of the menstrual cycle. The term menstrual hygiene management (MHM) originated in the WASH sector. After decades of use, this term has broad understanding and acknowledgment. Importantly, there is also a

definition and emerging attempts at measurement in the context of schools, through the WHO/UNICEF Joint Monitoring Programme for Drinking Water, Sanitation, and Hygiene (JMP).

In 2012, the JMP-WHO/UNICEF Joint Monitoring Programme for Drinking Water, Sanitation and Hygiene defined MHM as: “Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials.”

Menstrual health builds on this concept and encompasses the broader impacts of the psychological, socio-political, and environmental factors accompanying menstruation on mental, physical, and emotional health. Menstrual hygiene is significant for various reasons like health protection, Mental Health, Education and Participation and women empowerment

Traditionally menstrual products that were commonly used for managing menstruation by women since ages are Ashes or Sand, Cloth Pad, Sanitary pads etc. There are several health hazards involved while using these menstrual products. Ashes or Sand provides limited hygiene because it does not provide adequate comfort, absorption, and protection increasing the risk of infections. These materials cause skin irritations and chafing.

There are various alternatives available to traditional menstrual products like Tampons, menstrual cups etc that cater to the problems faced while using traditional menstrual products like comfort, protection, and absorption. Tampons are composed of cotton or a mixture of cotton and rayon. It is inserted into the vagina using applicators and can be used up to a period of 8 hours. Menstrual cups are reusable, flexible devices made from medical-grade silicone or rubber, designed to collect menstrual fluid instead of absorbing it. Menstrual cups create a secure seal to prevent leaks and can provide protection for up to 12 hours.

REVIEW OF LITERATURE

(Shwetha Ballal, Amritha Bhandary- International Journal of Reproduction, Contraception, Obstetrics and Gynecology 9 (4), 1382-1388, 2020) This paper highlights how high-school girls are aware of menstrual cups although barely 2.6% of people use them. It remarked that menstrual hygiene management is really important wherein a lot unrecognized. A challenge that is taken for granted is the basic knowledge of how to use it.

(Eka Septi Adelia Putri, Izzati Dwi, Pudji Lestari 2021): - The paper shows us choices of women's sanitary products. The paper tries to show that women would prefer to use menstrual cups considering the safety, hygiene factor, and comfort of using them. The choice of women to use menstrual cups instead of sanitary pads is considered the best medium for collecting menstrual blood because it can minimize fishy odors and the emergence of infections, irritations, and rashes.

(Gender, Work & Organisation 29 (4), 1095-1112, 2022): The paper states how conventional products are single-use and contribute so much to the marine and disposed waste. It also mentioned how there is so much paradox thinking to get open conversation about comfortable menstruation products available. It tells that people using cups feel like they are not menstruating.

(Joelle Natalie Mouhanna, Judith Simms-Cendan, Sabrina Pastor-Carvajal 2023):- The paper highlights that menstrual cup helps in reducing environmental impact. It tells that menstrual cups are affordable for those who are from backward regions and face difficulty in buying sanitary products. Menstrual cups

can be reused hence do not pollute the environment and reduce waste.

(Sitadhira Prima Citta, Takuro Uehara, Mateo Cordier, Takahiro Tsuge, Misuzu Asari Frontiers in Sustainability 5, 1391491, 2024):. The study has shed light on the fact that despite the rising interest in sustainable alternatives to single-use plastics, including menstrual products, the adoption of options like menstrual cups remains limited, with disposable products like sanitary napkins continuing to dominate the market.

RESEARCH METHODOLOGY

The research is observational and exploratory in nature. The data was collected using both primary and secondary data sources. A structured questionnaire has been designed and 102 responses have been collected from women residing in the Mumbai Region of Maharashtra regarding their views on menstrual hygiene, its impact on the environment, and use of modern sanitary products. The questionnaire consists of sections on demographics, decisions regarding the use of sanitary products, and decisions for switching the sanitary products based on their environmental impacts.

OBJECTIVES

1. To understand the priority of factors amongst users while selecting menstrual product
2. To check the awareness and the readiness to use menstrual cup.
3. To find out the most preferred menstrual product used by women

Hypothesis

1. There is no difference in the importance of three factors (environment, cost and ease of use) while selecting a menstrual product
2. There is no significant awareness and readiness to use menstrual cup.
3. There is no significant difference in preference of menstrual products used by women

Testing of Hypothesis -1

Null hypothesis: Respondents do not significantly rank environmental impact, cost or ease of use differently when selecting sanitary pads.

Alternative hypothesis: Respondents significantly rank environmental impact, cost or ease of use differently when selecting sanitary pads.

Friedman Test is used. It is a non-parametric statistical test used to detect difference in factors.

Sum of Ranks	Avg. Rank				
193.00	1.89	6. What factors are most important when you select a sanitary option? [Environmental impact]			
228.00	2.24	6. What factors are most important when you select a sanitary option? [Cost]			
191.00	1.87	6. What factors are most important when you select a sanitary option? [Ease of use]			
612.00	2.00	Total			
	102	n			
	8.490	chi-square (corrected for ties)			
	2	d.f.			
	.0143	p-value			
	multiple comparison values for avg. ranks				
	0.34	(at 0.05 significance level)	0.41	(at 0.01 significance level)	

Reject the null Hypothesis which shows there is a significant difference in the ranks of the factors (Environmental impact, Cost or Ease of use).

From the average ranks, it can be observed that:

- Ease of use has the lowest average rank (1.87), indicating that, on average, it is ranked the highest in importance by the respondents.
- Environmental impact has the second lowest average rank (1.89), meaning it is also viewed as quite important but slightly less than Ease of use.
- Cost has the highest average rank (2.24), indicating it is ranked as the least important factor on average.

Multiple Comparisons based on Rank Differences help in determining which factors differ significantly:

Comparisons:

1. Environmental impact vs. Cost:

Average ranks: Environmental impact = 1.89, Cost = 2.24.

Difference in ranks = $|1.89 - 2.24| = 0.35$.

Since $0.35 > 0.34$, this difference is statistically significant at the 0.05 level.

2. Environmental impact vs. Ease of use:

Average ranks: Environmental impact = 1.89, Ease of use = 1.87.

Difference in ranks = $|1.89 - 1.87| = 0.02$.

Since $0.02 < 0.34$, this difference is not statistically significant at the 0.05 level.

3. Cost vs. Ease of use:

Average ranks: Cost = 2.24, Ease of use = 1.87.

Difference in ranks = $|2.24 - 1.87| = 0.37$.

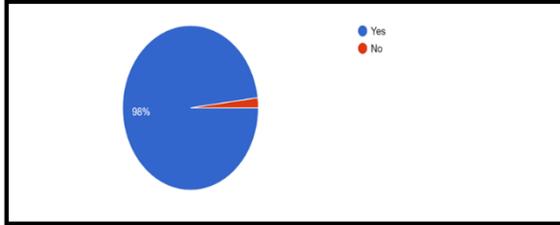
Since $0.37 > 0.34$, this difference is statistically significant at the 0.05 level.

There is a significant difference between Environmental impact and Cost ($p < 0.05$). Also, there is a significant difference between Cost and Ease of use ($p < 0.05$). But there is no significant difference between Environmental impact and Ease of use ($p > 0.05$).

Thus, it can be concluded that Cost is seen as less important than both Environmental impact and Ease of use, with Ease of use being the most important factor, followed closely by Environmental impact.

Testing of Hypothesis: 2 To check the awareness and the readiness to use menstrual cup.

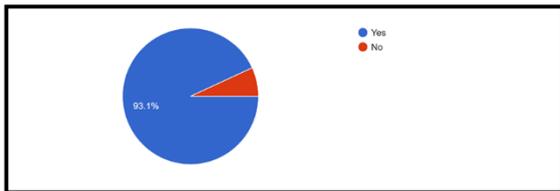
Graph: Awareness about Menstrual Cups



Interpretation : -

The chart highlights that a majority of the respondents i.e. 98% are aware of the menstrual cup. This demonstrates a strong understanding and familiarity with menstrual cups among the evaluated population. Just 2% of respondents are not aware of menstrual cups. This implies that a very small portion of the queried population may not have been exposed to this option.

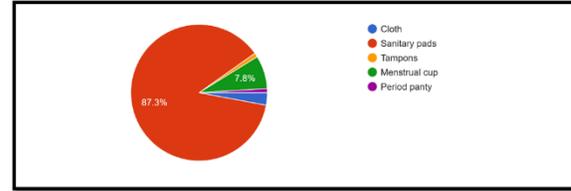
Graph: Readiness to Use Modern Menstrual Products



Interpretation: - The pie chart reveals a strong inclination towards modern menstrual products. A substantial 93.1% of respondents expressed willingness to adopt the use of modern menstrual products, indicating a potential market for innovative solutions. Only a small minority (6.9%) were hesitant, suggesting that the majority of the population is receptive to trying new and improved menstrual hygiene options.

Testing of Hypothesis -3 There is no significant difference in preference of menstrual products used by women

Graph: - KIND OF SANITARY PROTECTION BEING USED



Interpretation : -

The pie chart presents data on the types of sanitary protection used during menstruation among a sample of 102 respondents. The most striking observation made from the above data is the overwhelming preference for sanitary pads accounting for 87.3% of the total responses. This indicates that sanitary pads are the most commonly used sanitary protection among women.

1. Sanitary Pads: A clear observation can be made from the above graph that a majority of respondent use sanitary pads during their menstruation. This category comprises 87.3% of the total respondents.
2. Tampons: Tampons are not the famous choice of the menstrual product chosen by the respondents. Only 1% of the total respondents use tampons during menstruation.
3. Menstrual Cup: The menstrual cup is the second most popular choice, with 3.9% of respondents using it. It suggests that menstrual cups are gaining popularity but are not yet the ultimate choice for sanitary protection.
4. Cloth: Only 2.9% of respondents use cloth as a measure of protection for menstruation. This indicates that people have shifted from traditional products and started to accept modern menstrual products.
5. Period panty: Only a negligible percentage of respondents who use period panties state that it is an unpopular choice.

FINDINGS

1. The data shows the major responses from teenagers and young adults who have completed or pursuing graduation, indicating youthful insights.
2. Environment was seen as the most important factor followed by cost and ease of use when selecting sanitary products

3. Nearly 87% of respondents use sanitary pads followed by the users of menstrual cups.
4. It has been witnessed that a greater part of people are ready to switch to modern menstrual products and have a primary understanding of products like menstrual cups.
5. Despite awareness, hardly 9.8% have tried a menstrual cup.
6. The users showed satisfactory opinions on the usage of menstrual cups and have shown a positive outlook on recommending them to others.
7. There is a mixed perspective because most people consider environmental degradation while choosing a menstrual product for themselves and are aware that pads cause the highest sanitary degradation and still they use them.

SUGGESTIONS

1. Use products that provide comfort and hygiene:- Women lack awareness about modern menstrual products, which leads them to continue using conventional menstrual products that can be hazardous to their menstrual health. People can be made aware of modern menstrual products by advertising the product or by organizing campaigns and magazines.
2. Create Awareness: - Women can be educated about modern menstrual products such as menstrual cups, which promote better hygiene, are eco-friendly, and can be conveniently used for several years.
3. Understand the benefits of using menstrual cups: - Menstrual cups are reusable, reducing plastic waste. They are cost-effective and can last for 5 years. They are free from harmful chemicals since they are made from medical-grade silicone or rubber.
4. Start with the right menstrual cup: - Menstrual cups are available in different sizes based on age and flow. They can be small medium and large size cups. Beginners might choose the softer cups for comfort. One should choose the cups as per their preferences.
5. Learn how to use it: - Initially inserting a menstrual might feel challenging. However using folding techniques like the C-fold, V-fold, or the punch-down fold can make insertion easier. For

attaining comfort, it is recommended to practice during lighter flows. When removing the menstrual cup, relax, pinch the base, and gently pull it out. Avoid pulling it out directly.

6. Maintain hygiene: - Before using the cup, sterilize it by boiling it in water for 5-10 minutes. Always wash your hands properly before insertion. Store the cup in a breathable pouch (normally provided) when not in use.

CONCLUSION

Menstrual hygiene is a fundamental aspect of every woman's overall health and well-being yet traditional menstrual products have major environmental and health consequences. Taking informed decisions about menstrual hygiene products and practices is essential, as they directly impact physical health, emotional comfort, and environmental sustainability. Menstrual cups provide a sustainable alternative, offering various advantages such as reduced environmental waste, cost-effectiveness and lessen exposure to harmful chemicals. It not only prevents infections and discomfort but also ensures that women can lead their daily lives with confidence and dignity. Despite these benefits, adoption of menstrual cups face extensive challenges such as lack of awareness, lack of knowledge, societal stigma and cultural differences in various developing areas.

To tackle these issues, efforts must be given for educating communities, improving accessibility, and fostering a supportive environment for sustainable practices for menstrual products and hygiene. By adopting menstrual cups, we cannot only reduce our environmental footprints but also enable us to make healthier choices. Rethinking menstrual health with innovative solutions like menstrual cups is a crucial step towards achieving both environmental and health benefits.

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