



Research Article

A SCITECHNOL JOURNAL

# Menstrual Cup: A Detailed Qualitative Survey on the Utility and its Role in Menstrual Hygiene

Jill Kothari, Rahul Sawant\*, Shruti Dwivedi, Chetna Jha and Sahil Bharwada

## Abstract

The purpose of a sustainable product is to make it viable to a mass population. Our aim here was to understand what hampers the usage of Menstrual Cups on a large scale. To make a fair analysis, we performed a survey on women, doctors and manufactures to articulate a concise understanding of their opinion about the product. The survey reflected manifold reasons and reviews for using or not using a menstrual cup. The research using various analysis tests helped us filter through a concrete set of gaps that disallow women to use the product and also produce a solution to fill up the gap.

**Keywords:** Menstrual cup; Menstrual hygiene; Tampons

## Introduction

Is Menstrual Hygiene important? Apart from personal hygiene, menstrual hygiene management practices are important for prevention of urinary and reproductive problems. Menstrual cup, a revolutionary eco-friendly and sustainable menstrual hygiene product is changing the dynamics of use of sanitary products around the globe. The inception of menstruum is undoubtedly the most vibrant transformations transpiring in each woman during puberty. Menarche is a psychosocial and behavioral switch apart from a physiological change. Menstrual hygiene includes essentialities and requirements inclusive of but not limited to the utilization of absorbents like sanitary pads, tampons and menstrual cups, satisfactory cleansing of the genitals, suitable dumping of utilized absorbents, and other healthcare needs of females during the menstrual cycle. For the Period Of menstruum, practicing good hygiene is very critical which precludes from undesirable health consequences. Though menstruation is a natural bodily activity, it is nevertheless enveloped with societal prohibitions, fallacies, and mismanagements, which is incredibly difficult for menstruating girls in emerging nations. Owing to these societal anastigmatic, ethnic, and holy restraints, catamenial procedures are deemed as a massive constraint for managing catamenial hygiene.

Owing to this, our research highlights the alternative to make use of menstrual cups as a fluid collection device instead of an absorbent device. Still struggling to gain mass popularity, menstrual cups are undeniably an ecofriendly and much cheaper option than pads or tampons.

This research underscores the parameters which affect the usage of cups as a fluid collection device and focuses on behavioral psychology of women who have used the product.

A menstrual cup is a not so recent technology used in Menstrual Hygiene Management. It is usually made up of medical grade silicone, rubber, latex, or elastomer and can last up to 10 years. Disposable single use menstrual cups are also available in the market. Various parameters like safety, quality, cost, availability and ease of using separate menstrual cups from other conventional products for menstruation in the market.

## Literature review

Menstrual cups are safe devices if you use them with clean hands, proper hygiene, and wash them appropriately. The nonabsorbent property and the filling capacity of these cups make it unique and don't cause any vaginal mucosa irritation. TSS-Toxic shock syndrome caused by a menstrual cup is very negligible which makes it a better device than the disposable products. The major benefit of a menstrual cup over a tampon is that it is made up of silicon or rubber and it does not include carboxymethylcellulose, which would accumulate a lot of blood and eventually provide a medium for bacterial growth. Therefore, the cups have been used as an effective alternative to the tampons [1]. Menstrual cups give women the opportunity to lead a safe and hygienic menstrual cycle. Menstrual cups do not absorb blood like tampons and sanitary pads which would give a higher probability of getting an infection and can be used for 4 to 5 years with sterilization once between the cycles [2]. Since these can be used for a longer period of time, the cost of one typical tampon is \$ 0.24 or of a pad is \$ 0.23 and the median number of these products used is around 169 pads/tampons per year which is almost equivalent to a cup that costs around \$ 39.99. This supports the point of the cup being cheaper and better than the other protection products [3]. However, people find the pricing to be a bit expensive. The disposable products like sanitary napkins and tampons take up 25 years to shatter along in the sea and can produce a considerable ecological influence. After taking into account the waste generated by 10 years of a cup, it was observed that the cups only contribute to a smaller fraction of total waste generated from using pads and tampons. Once the durability of these cups is over, they can be dumped into the landfills and incinerated as they are made up of silicone, which does not cause any harm to the environment. The menstrual fluid can also be poured into a small pit in the soil and it works as a plant fertilizer which gets rid of all the pathogens causing sexually transmitted diseases. A menstrual cup is a feminine hygiene device inserted into the vagina during menstruation. It is a perceived notion that menstrual cups are not comfortable and easy to use due to less awareness and not marketed enough compared to other menstrual products which are heavily marketed. But through continuous case studies and trials, women have found menstrual cups comfortable with each use [3,4]. The medical expert mentioned that a cup is not only safe and hygienic but it also allows women to perform their routine activities like training, exercising and swim-

\*Corresponding author: Rahul Sawant, Student, Department of Management, Shobhaben Pratapbhai Patel School of Pharmacy and Technology Management, SVKM's NMIMS, India E-Mail: rahulsawant28199@gmail.com

Received: 08 November, 2021; Accepted: 22 November, 2021; Published: 29 November, 2021

ming without any fear of its position [5]. The first and ideal role of any menstrual product is to cause absolutely no leakage. Menstrual cups have significantly shown to have minimum leakage after each use and shown to be ideal [3]. Since menstrual cups are to be inserted inside the body, they are often misinterpreted to be harmful or painful. Although it was found that the insertion of menstrual cups was not that difficult. The removal process is quite easy and is done simply by pushing the cup with two fingers on either side and then throwing it outwards. It is then reinserted following the same steps after emptying and cleaning the cup appropriately with a special napkin. The cup can be boiled for 5-10 mins at the end of every cycle, making sure that it does not destroy the silicone material [5]. Uro-vaginal symptoms include vaginal abnormalities like vaginal fistulas, urethral diverticulum, pelvic pain, and other urinary tract infections. Uro-vaginal symptoms were found to be almost negligible. Cups were reported to be better than any as it did not cause skin irritation. Menstrual cups have been accessible to people for years now but the major reason for its lack of usage has been found because of lack of publicity and awareness of it. It was found that awareness was low among women who attained menarche at an early age [6]. It was observed in one of the articles that product awareness is one of the top 3 factors that reflect the buying intentions of women in India. Menstrual cups are safe, effective, long lasting and largely unknown. Its lack of awareness restricts the shifting to new menstrual products. Lack of effective promotion is hampering the new menstrual product purchase [7].

In this project we have studied the parameters which affect the usage of menstrual cup in detail and have found out how well and regularly women would prefer to use menstrual cup over other products if they were well versed with the usage and advantages. Hence the main reason to carry out the RP-2 was to find out what were the reasons for the women to not use menstrual cups despite of having such advantages over other menstrual products. Surveys were conducted in order to know the women's, doctors and manufacturers preferences regarding menstrual cups.

Doctors do believe that menstrual cup is a great product when it comes to menstrual hygiene and we want to know their thoughts about the same. And lastly to contact the manufacturers as well and knowing their opinion about this product, how well it performs in market, what are the main reasons for people not purchasing it. To understand if the manufacturers are doing enough to support this product and what do they believe in order to boost the sales of this product. And lastly to understand the reason for the gap created with respect to its promotion and awareness.

### Research objectives

The objective of this research study is to provide a vision and understand the role of menstrual cups in menstrual hygiene management.

- To find out women's perception, knowledge and awareness towards using a menstrual cup and which attributes hinder their buying behavior.
- To understand the doctor's medical opinion on the usage of menstrual cups and their effects on the health of women.
- To find out the manufacturers' perspective about the reasons be-

hind less consumption of menstrual cups in the market.

## Methodology

### Aim

A quantitative study was carried out specifically to 3 targets audiences Menstruating Women, Doctors and Manufacturers. The objective of carrying out this survey is to understand the factors responsible for less usage of Menstrual Cups compared to other menstrual products.

### Population and sample size

The study was carried forward by targeting 3 different population audiences. It was initiated by preparing a well-structured questionnaire which was distributed to all the different target groups.

- Total of 1020 menstruating women filled the questionnaire out of which 215 were Menstrual Cup Users and 805 were Non-Cup Users.
- Total of 125 questionnaires were filled by Doctors with different Specialties ranging from Gynecologist, General Physician, Homeopathic Physician and Clinical Dietician.
- Total of 25 Menstrual Cup Manufactures filled the survey.

### Data collection method

The survey was carried out via 2 means: Google forms and one on one interview. Below are some of the questions that were asked to the respective target audience based on the gap created.

### Sample questions for target population

#### Menstruating Women:

For cup users

- I. Who influenced your choice of using a menstrual cup?
- II. Did you experience any problem after using a menstrual cup?
- III. How influential could be the advertisements in promoting the usage of menstrual cups?
- IV. According to you, what are the possible reasons for not adopting the menstrual cup?
- V. Kindly comment on the following with respect to your experience with a menstrual cup?
  - 1) Ease of Insertion and Removal of Cup
  - 2) Cleaning of cup after use
  - 3) Comfortable to use
  - 4) Hygiene
  - 5) Safety

For non-cup users

1. What are the reasons that restrict you from using a menstrual cup?
2. Have you ever seen any advertisements for the Menstrual Cup?
3. Is the usage of a menstrual cup accepted by your culture/religion?

4. Are you completely aware of the benefits/attributes of a menstrual cup?

#### Doctors

1. Is a menstrual cup medically safe to use?
2. State few disadvantages of using a menstrual cup over pads/tampons. (If Any)
3. Are advertisements being a huge influential factor for the buying choice of cups?
4. Have you encountered any case reporting side effects due to usage of menstrual cups?
5. What are your views on menstrual cups being more environments friendly and cost effective than pads and tampons?
6. What are the reasons that restrict women from using a menstrual cup?

#### Manufacturers

1. Which menstrual products do your company manufacture and what is its MRP?
2. Which menstrual product is sold the most, moderate and least according to you?
3. Where is the demand of a menstrual cup most dense based on the following categorization?
  - i) Country
  - ii) Age Group
  - iii) Economic Class
4. State few reasons for the poor sale of menstrual cups over other menstrual products.
5. How influential could be the advertisements in promoting the usage of a menstrual cup?
6. Which current communication programmer do you use to market the sale of menstrual cups?
7. Which of the following attributes of menstrual cups are better than that of pads or tampons?
8. What are the reasons that restrict women from using a menstrual cup?

#### Data analysis

Quantitative study was conducted using IBM SPSS and Microsoft Excel Software, based on the data collected from preliminary studies. Few assessments were carried out to evaluate the collected data using SPSS. The tests used include T-test, Chi square test, Pie Charts, Bar Charts and Column Charts.

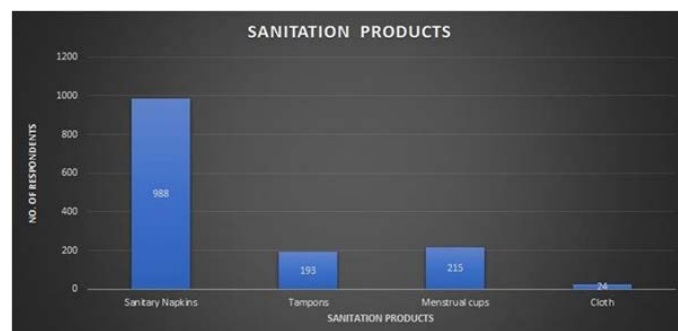
## Results and Interpretations

### Target I-Menstruating women

The protagonist target audience of our research was the menstruating women. Since the product's ultimate creation was for women, their

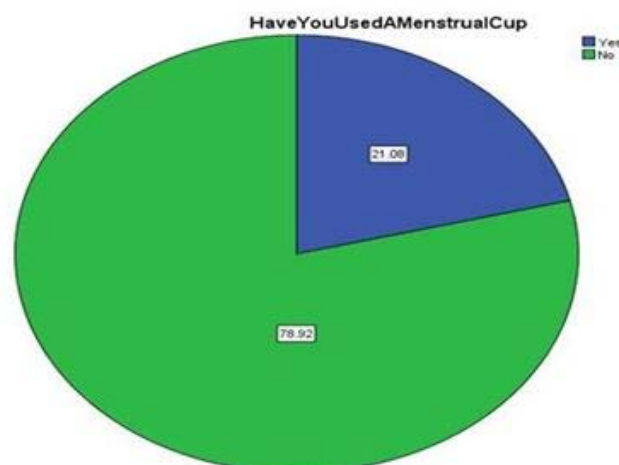
opinion and review is the most important. Menstruating women from all age group and across India were part of the survey conducted for the research.

In our data collected from the Figure 1, 1020 women,  $\frac{3}{4}$  of the women were sanitary pad users (988). The second most used sanitary product was menstrual cup (215) and tampons were used by (193) women. A small fraction of women still use cloths as a menstrual product.



**Figure 1:** Sanitary products used by women.

Sanitary napkin is clearly the most used product which indicates its high popularity and existence in the market. As evident from the Figure 2, a major population of menstruating women (805) has never used a menstrual cup. Whereas only (215) have used the cup. And those who have described the experience of using a menstrual cup, Majority of the women who have tried the menstrual cup are happy with the product (68% of the population). It was noted that the majority of them felt uncomfortable at first since a foreign object is inserted inside the vagina. But after a few times, they loved the product and also called it revolutionary. 32% of the population had a very bad experience which ranged from excess amount of pain, discomfort and infection.



**Figure 2:** Menstrual cup used.

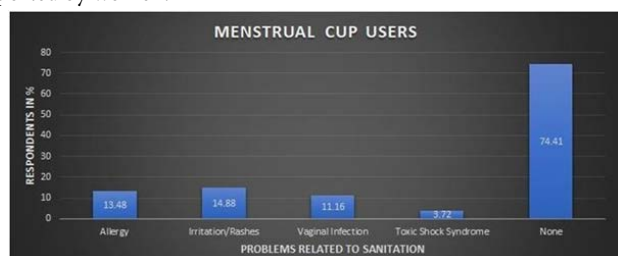
Sanitation problems, especially during periods are common. However, use of the wrong sanitary product may increase the problem manifold and cause severe health risks. As we can see from the Figure 3, women who used sanitary pads/tampons or cloth as sanitary products faced sanitation problems like vaginal infection (91.16%), Irritation/rashes (55.37%), Dryness (26.69%), Allergy (18.54%), Toxic shock syndrome

(5.13%) while 24.35% did not face any problem.



**Figure 3:** Sanitary problems faced by non-menstrual cup users.

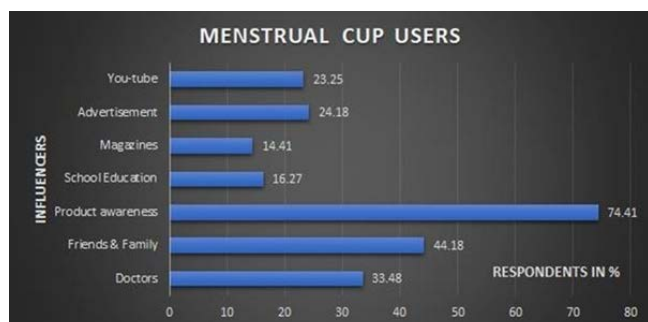
On the other hand, Figure 4 depicts that women who used menstrual cups as sanitary product, 74.41% of them did not face any sanitation problem. However, Irritation/rashes (14.88%), Allergy (13.48%), vaginal infection (11.16%) and Toxic shock syndrome were some problems reported by women.



**Figure 4:** Sanitary problems faced by menstrual cup users.

When we compare both the charts, we infer that the percent of women that have voted none in the problems related to menstrual cup (74.41%) is more than double of those who voted none in the problems related to conventional products (24.35%), clearly indicating the sanitary safety provided by the menstrual cups.

This evidently specifies the adverse health risk the conventional sanitary products pose on the health of women. When questioned about what or who significantly influenced menstrual cup users into using menstrual cups, they responded by ranking product awareness (74.41%), friends and family (44.18%), doctors (33.48), advertisement (24.18), YouTube (23.25), School education (16.27) and magazines (14.41%) as factors for using menstrual cups as depicted from the Figure 5. Thus pointing to the fact that product awareness about the product in the market needs to be addressed well for better communication of the uses of the product.



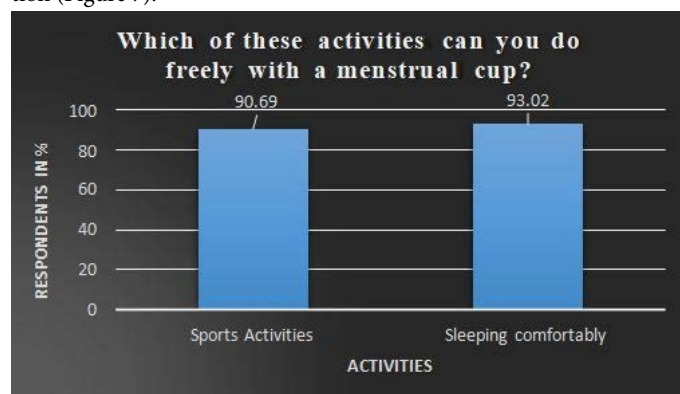
**Figure 5:** Factors influencing menstrual cup use. Whereas when non menstrual cup users were questioned about who or what influenced

them to use pads or tampons or cloth; we can observe from Figure 6 that friends and family (67.86%), product awareness (47.09%), school education (35.72%), advertisement (24.59%) were ranked in this order along with magazine (15.82%) and YouTube (7.78%). Thus confirming that opinions of friends and family play a pivotal role in encouraging girls to use pads or tampons or cloth, especially by girls who experience periods for the first time.



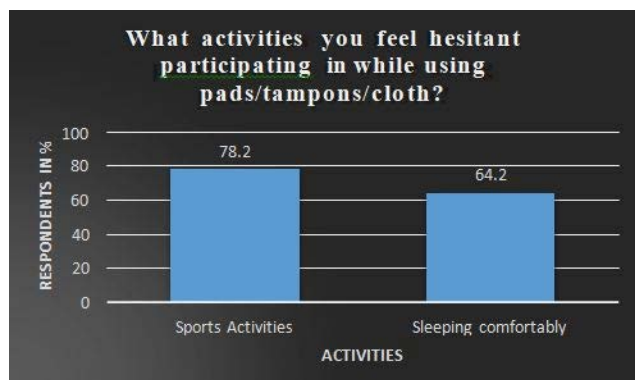
**Figure 6:** Factors influencing pads/tampons/cloth use.

Altogether we can infer that each of these factors play some or the other role in influencing the choice of the product. Irrespective of it being a menstrual cup or the other conventional products like sanitary napkins, tampons or cloth, sources like product awareness, opinion of friends and family, recommendation of doctors and advertisement have a great impact on the purchasing or the using intentions of the general population (Figure 7).

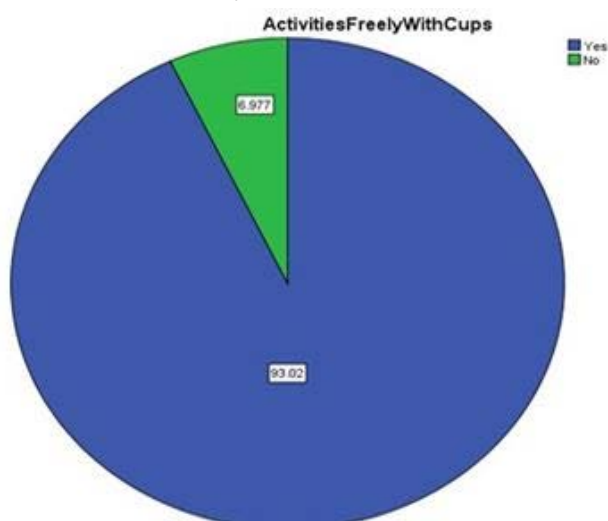


**Figure 7:** Use of doing activities with menstrual cup.

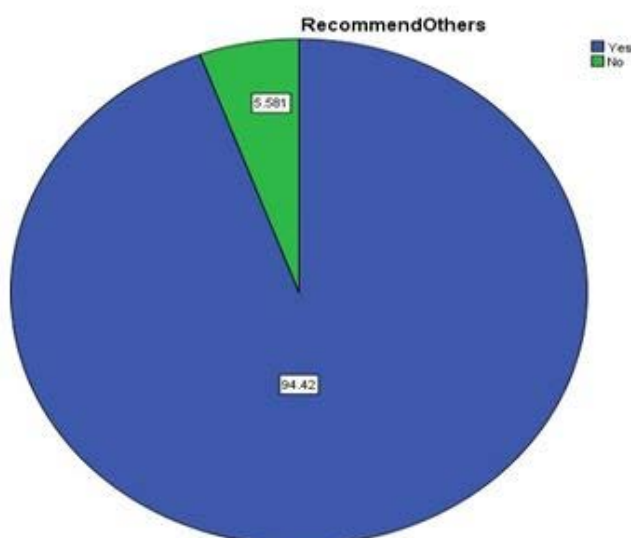
Along with periods comes the stress of doing basic activities. Many women have improper sleep during periods because of constant fear of leakage. So when asked about activities they feel hesitant participating in while using pads/tampons/cloth Figure 8 shows that 78.2% were hesitant in sports activities and 54.2% couldn't sleep comfortably. On the other hand, Figure 7 highlights that 90.69% and 93.02% women felt comfortable in sports activities and sleeping comfortably, respectively. Keeping aside the fact that using pads and tampons are not only uncomfortable but unhygienic, using menstrual cups takes away that doubt completely.



**Figure 8:** Problems faced in doing activities using pads/tampons/cloth. And a whopping 94.42% would affirmatively recommend the product to others as shown in the Figures 9 and 10.



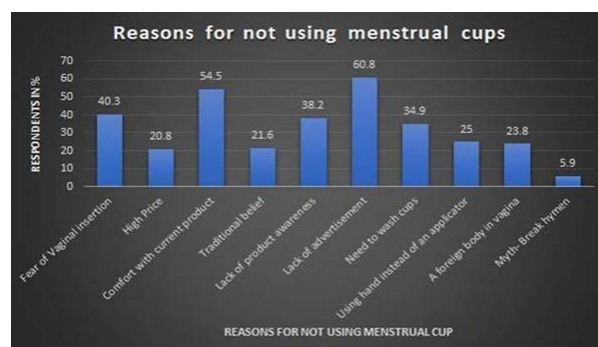
**Figure 9:** Ease of doing activities with cups.



**Figure 10:** Recommendation to use a menstrual cup.

Our major objective in this research project was to understand what the reasons were for women not using menstrual cups which are shown

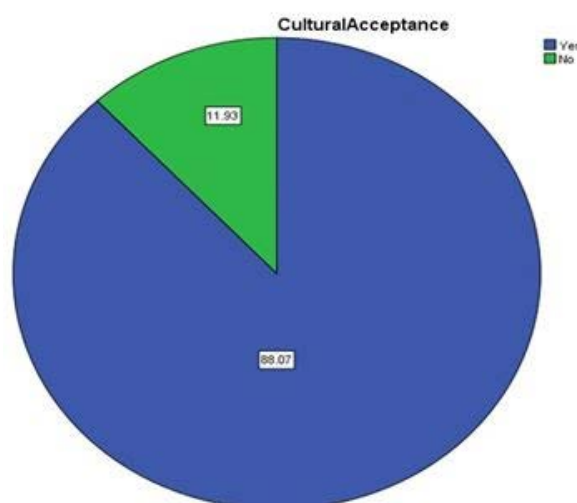
in the Figure 11. When given probable reasons of not choosing menstrual cup over pads or tampons we found that Fear of Vaginal insertion (40.3%), High Price (20.8%), Comfort with current product (54.5%), Traditional belief (21.6%), Lack of product awareness (38.2%), Lack of advertisement (60.8%), Need to wash cups (34.9%), Using hand instead of an applicator (25%), A foreign body in vagina (23.8%), Myth Break hymen (5.9%) were major areas of concern for disapproval of menstrual cups.



**Figure 11:** Reasons for not using menstrual cups.

Where concerns related to high price persist as people do not yet look at the bigger picture, i.e., a menstrual cup can last for 10 years for the same price. While annual cost of sanitary pads is 6x that of a menstrual cup, making menstrual cups a sustainable investment rather than a purchase. It is also undoubtedly understood that more than the product attributes, it's the factors like lack of advertisement and comfort with the current product that makes women restrict the use of the novel menstrual protection product.

Considering the fact that cultural opinions and ideologies largely affect a person's lifestyle, especially in India; we asked women if using menstrual cups was culturally acceptable for them and for 88.07% of them it was culturally acceptable. While for 11.93% it was not culturally acceptable. Therefore the Figure 12 proves that irrespective of cultural beliefs of difference, usage of a menstrual cup is not affected by it.

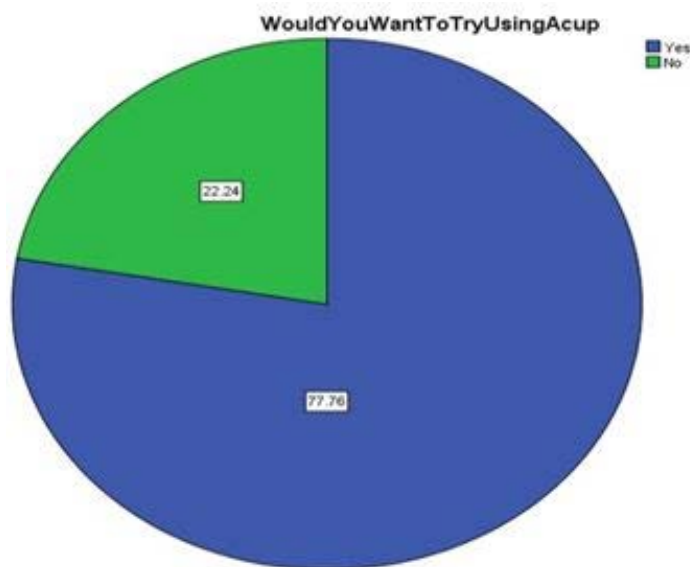


**Figure 12:** Cultural acceptance of menstrual cups.

To women who had never used a menstrual cup before, we gave them

a brief description about the product in our google form before asking them if they would want to try to use the menstrual cup to which 77.76% women responded with a yes and 22.24% women said no as

seen in the Figure 13. Again supporting that fact that proper product awareness can create a positive acceptance of menstrual cups in women.



**Figure 13:** Openness in using a menstrual cup.

In our survey we wanted to know how women compare different sanitary products. Thus, when we asked menstrual cup users to rank different products with respect to safety, hygiene and value for money;

menstrual cup ranked no.1 followed by pads, tampons and cloths on 2nd, 3rd and 4th rank respectively as depicted from the Tables 1 and 2.

Rank the following menstrual tools in the order of your preference with respect to Hygiene-Menstrual Cup user								
	1	2	3	4	5	6	Score	Hygiene Rank
Sanitary Napkins	5	3	10	19	160	18	1025	2
Tampons	138	3	5	18	38	13	499	3
Cups	18	1	2	14	37	143	1125	1
Cloth	179	26	7	0	2	1	268	4
Highest Score Possible $215 \times 6=1290$								
Lowest Possible Value $215 \times 1=215$								

**Table 1:** Ranking of Various Attributes (Hygiene-Menstrual Cup user).

Ranking of Various Attributes (Menstrual cup users).								
	1	2	3	4	5	6	Score	Value for money Rank
Sanitary Napkins	5	11	23	26	132	18	968	2
Tampons	139	5	7	23	32	9	476	3
Cups	20	1	1	12	23	158	1136	1
Cloth	181	13	9	5	5	2	291	4
Highest Score Possible $215 \times 6=1290$								
Lowest Possible Value $215 \times 1=215$								

**Table 2:** Ranking of Various Attributes (Menstrual cup users).

Menstrual cup was ranked no.1 in all three factors which shows the trust of women in menstrual cups after its use.

On the other hand when asked non-menstrual cup users to rank the products with respect to safety, hygiene and value for money; Table 2

shows that pads ranked no.1 followed by tampons, cloth and menstrual cup on 2nd, 3rd, and 4th rank respectively. Here, menstrual cups are ranked in the last position since they were not used by women in the first place to give any opinion about it. While also reflects the massive popularity of pads as menstrual hygiene products (Tables 3-5).

Rank the following menstrual tools in the order of your preference with respect to Safety-Non user								
	1	2	3	4	5	6	Score	Safety Rank
Sanitary Napkins	1	2	12	103	440	247	4135	1
Tampons	564	6	30	73	43	90	1713	2
Cups	805	0	0	0	0	0	805	4
Cloth	604	88	63	36	9	8	1206	3
Highest Score Possible $805 \times 6=4830$ Lowest Possible Value $805 \times 1=805$								

**Table 3:** Ranking of various attributes (Safety-Non user).

Rank the following menstrual tools in the order of your preference with respect to Hygiene-Non user								
	1	2	3	4	5	6	Score	Hygiene Rank
Sanitary Napkins	1	4	28	159	416	196	3985	1
Tampons	558	5	16	78	53	95	1763	2
Cups	805	0	0	0	0	0	0	4
Cloth	610	100	57	29	5	4	1146	3
Highest Score Possible $805 \times 6=4830$ Lowest Possible Value $805 \times 1=805$								

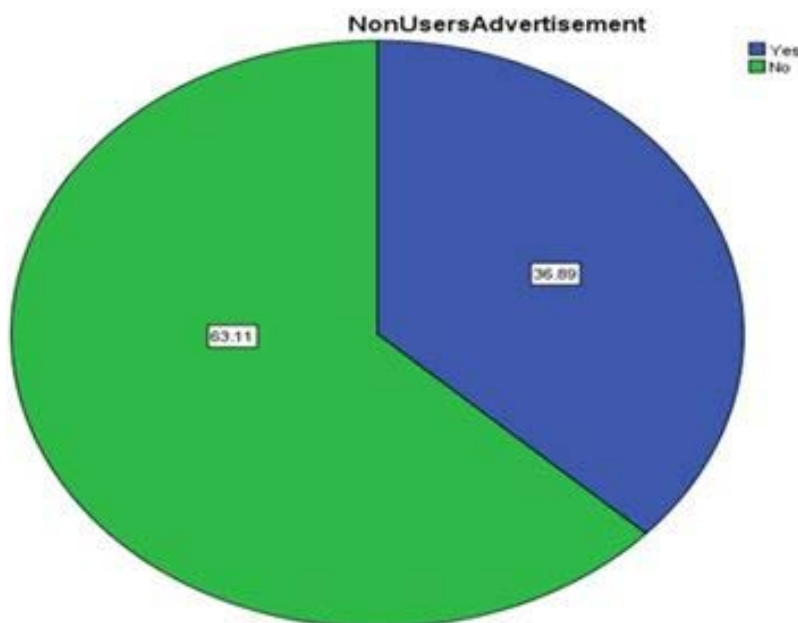
**Table 4:** Ranking of various attributes (Hygiene-Non user).

Rank the following menstrual tools in the order of your preference with respect to Value for Money-Non User								
	1	2	3	4	5	6	Score	Value for Money
Sanitary Napkins	4	15	61	196	361	168	3814	1
Tampons	550	10	25	81	45	94	1758	2
Cups	805	0	0	0	0	0	805	4
Cloth	611	47	32	60	38	17	1333	3
Highest Score Possible $805 \times 6=4830$ Lowest Possible Value $805 \times 1=805$								

**Table 5:** Ranking of various attributes (Menstrual cup non-users).

To analyze the role of advertisements in the use of menstrual cups, we performed chi-square tests (Tables 6 and 7) on the data to check the association between the two important factors Awareness and Advertisement. As per the result of the analysis conducted, the significance value of the Pearson chi square test was less than 0.5, which means there is some association between them. And, the contingency coefficient value

for the  $m \times m$  matrix 0.426 shows that it was weakly associated. In other words, advertisement plays a crucial role in the prevalence of menstrual cup use however; it is not the only important factor influencing the use of menstrual cups. Thus, supporting the fact that menstrual cups can be better propagated in the market with the help of advertisements (Figure 14).



**Figure 14:** Advertisement viewed by menstrual cup non-users.

Chi-Square Tests					
cs	value	df	Asymp. Sig. (2-sided)	Exact Sig (2-sided)	Exact Sig (1-sided)
Pearson Chi-Square	19.859 <sup>a</sup>	1	0.000008		
Continuity Correction <sup>b</sup>	19.166	1	0.000		
Likelihood Ratio	19.604	1	0.000		
Fisher's Exact test				0.000	0.000
Linear-by-Linear Association	19.834	1	0.000		
N of Valid Cases	805				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 95.58.

b. Computed only for a  $2 \times 2$  table.

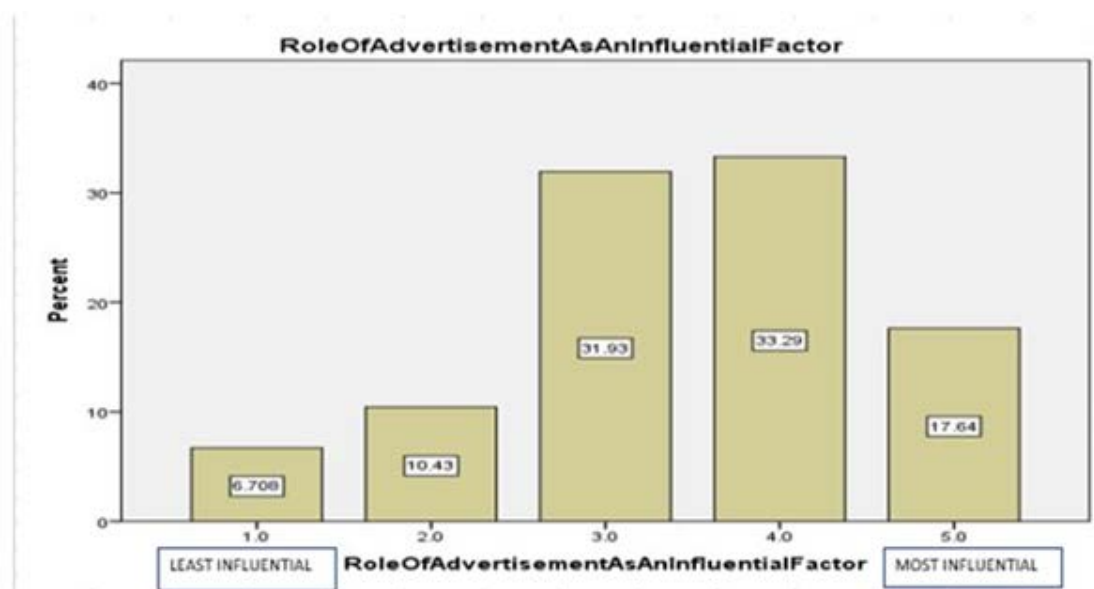
**Table 6:** Chi Square test depicting association between lack of advertisement and lack of awareness from menstrual cup non-users perspective (Chi-Square Tests).

Symmetric Measures			
		value	Approx.Sig
Nominal by Nominal	Phi	0.470	0.000
	Cramer's V	0.470	0.000
	Contingency Coefficient	0.426	0.000
N of Valid Cases		805	

**Table 7:** Chi Square test depicting association between lack of advertisement and lack of awareness from menstrual cup non-users perspective.

On the scale of 1-5 (5 being the most influential and 1 being the least) the role of advertisement as an influential factor was seen in Figure 15 as 33.29% on scale 4, 31.93% on scale 3, 17.64% on scale 5, 10.43% on

scale 2 and 6.709% on scale 1. In other words, advertisement is important but not the only important factor that can help in promoting the menstrual cup.



**Figure 15:** Role that advertisement can play in promoting the menstrual cup.

When the same analysis was conducted on the menstrual cup users to know about the relationship between the awareness of menstrual cups and its advertisement, the Pearson chi square significance was less than 0.5 and the contingency coefficient was 0.266 which signifies weak association as depicted from the Table 8. In other words, lack of advertise-

ment isn't the only reason for the lack of awareness but it definitely has an impact on the awareness. Thus encouraging other modes of awareness in the market to propagate the use of menstrual cups (Tables 8 and 9).

Chi-Square Tests					
	value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	16.374 <sup>a</sup>	1	0.000052		
Continuity Correction <sup>b</sup>	15.263	1	0.000		
Likelihood Ratio	16.474	1	0.000		
Fisher's Exact test				0.000	0.000
Linear-by-Linear Association	16.298	1	0.000		
N of Valid Cases	215				

c. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 95.58.

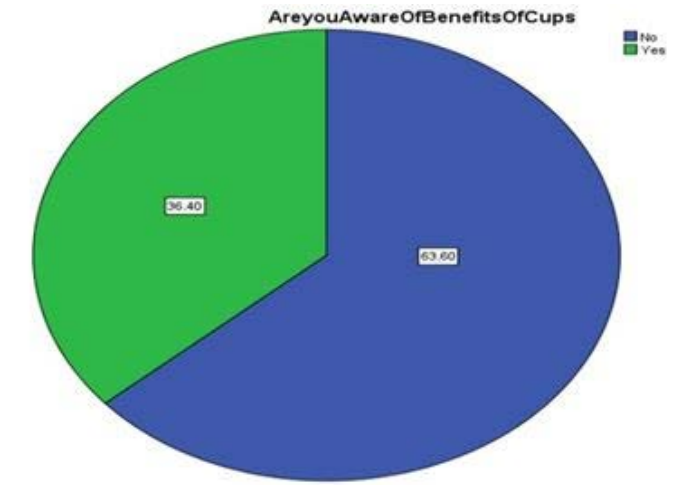
d. Computed only for a 2 × 2 table.

**Table 8:** Chi Square test depicting association between lack of advertisement and lack of awareness from menstrual cup user's perspective (Chi-Square Tests).

Symmetric Measures			
		value	Approx. Sig.
Nominal by Nominal	Phi	0.276	0.000
	Cramer's V	0.276	0.000
	Contingency Coefficient	0.266	0.000
N of Valid Cases		215	

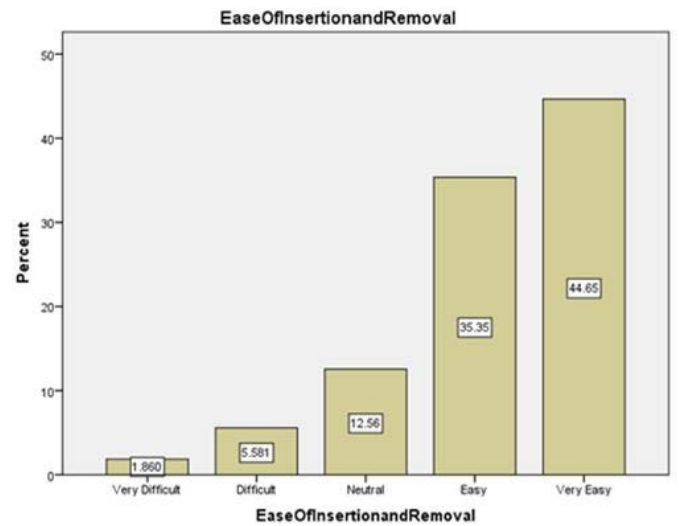
**Table 9:** Chi Square test depicting association between lack of advertisement and lack of awareness from menstrual cup user's perspective.

This can be supported by the pie chart from the Figure 16, where non-menstrual cup users were asked about their awareness about the benefits of menstrual cups and 63.60% women were not aware about it. This ratio overlaps with the ratio of the women who have not seen any advertisement for menstrual cup. Another direct correlation made between these two factors lacks of advertisement and lack of product awareness (Figure 13).

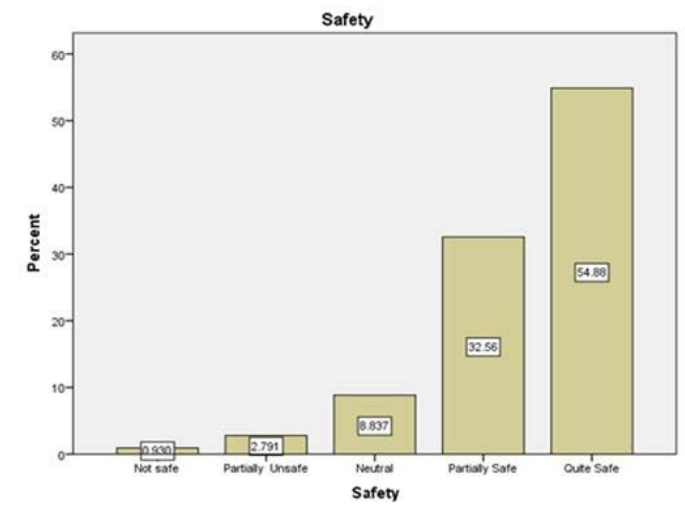


**Figure 16:** Awareness of menstrual cup amongst non-users.

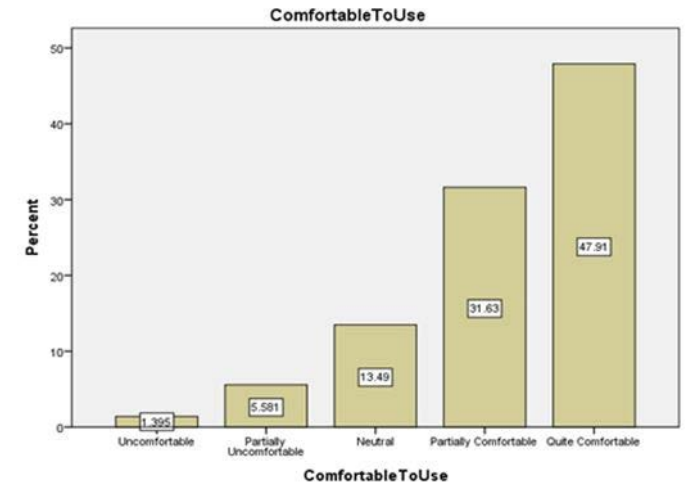
Lastly, to understand the role of menstrual cup as a menstrual hygiene management product better, we asked menstrual cup users to rank the product based on seven essential factors like ease of insertion/removal, safety, hygiene, odor, leakage, comfort to use, cleaning of cup before/after use as shown in the above Figures 17-23 and menstrual cups were positively ranked in all. 44.65% women found insertion and removal very easy. 54.88% women found menstrual cups to be safe. For 47.91% women using menstrual cups were comfortable. 20.93% women did not face any leakage problem. However, 45.12% of women faced mild leakage problems. 40.47% women thought cleaning the cup after use was very easy and 39.07% women thought it was easy.



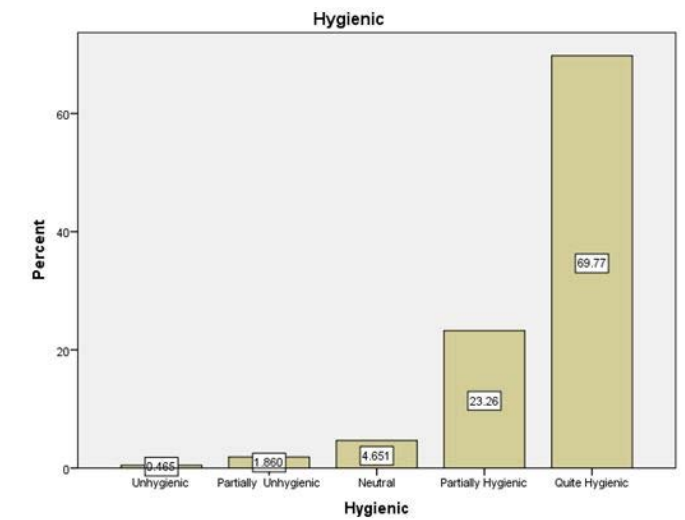
**Figure 17:** Ease of insertion and removal of cup.



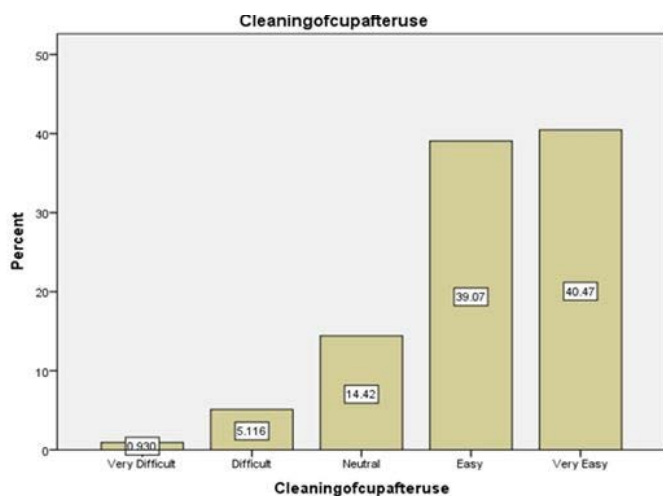
**Figure 18:** Safety with respect to menstrual cup.



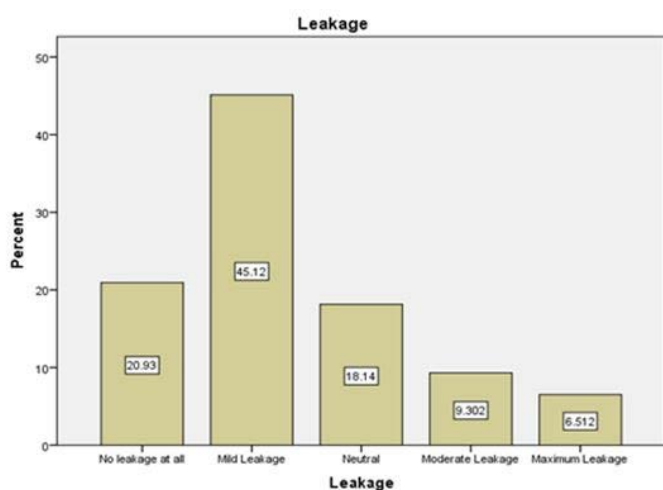
**Figure 19:** Comfort with respect to menstrual cup.



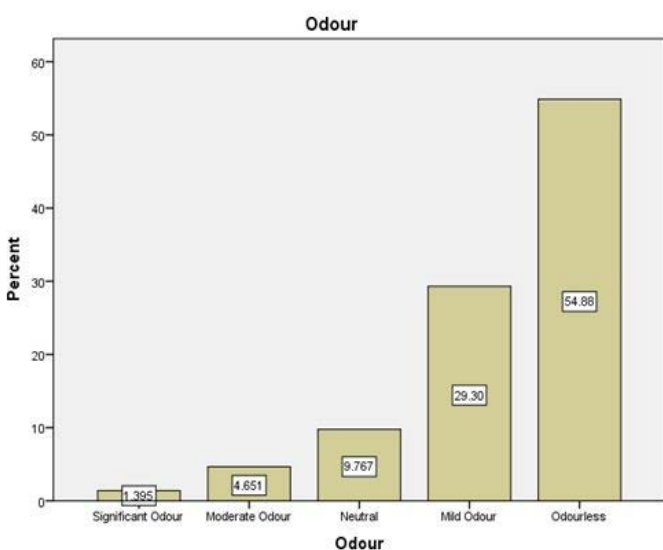
**Figure 20:** Hygiene with respect to menstrual cup.



**Figure 21:** Ease of cleaning of cup after use.



**Figure 22:** Leakage with respect to menstrual cup.



**Figure 23:** Odour with respect to menstrual cup.

And when asked about their negative experiences this what they had to say; the most common negative aspect that majority of the women believe is the Insertion of a menstrual cup told by 250 women (25% of the population). They believe the insertion and removal of a foreign object into their body is very daunting and they don't feel comfortable using it.

The second most negative aspect of usage of a menstrual cup is Lack of Advertisement and Awareness by 240 women (24% of the population). Unable to see promotion of using a menstrual cup and showing the usage of the same makes women not very confident in buying it in the first place.

100 women (10% of the population) believe that using a menstrual cup may cause increased risk of infection.

100 women (10% of the population) think that the handling of a cup and washing of a cup sounds very unhygienic and they would rather use a one-time use and throw menstrual product as that would also lead to less chances of getting an infection.

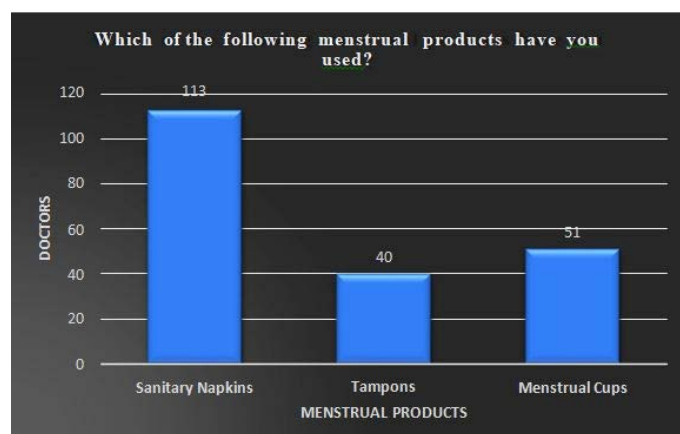
20 women (2% of the population) believe that using a menstrual cup would lead to leakage problems and they are very much comfortable using another menstrual product which does not lead to this problem.

10 women (1% of the population) believe this would lead to Toxic Shock Syndrome as it is inserted inside the vagina and therefore are fearful of using the product.

## Target II-doctors

The second target audience for our survey was the doctors (mainly Obstetrician-Gynecologists and Lady General Physicians) who consult and advise the menstruating women regarding maintenance of their menstrual hygiene and menstrual protection methods. Understanding their opinion towards this product is very crucial as they are the actual influencers of the menstrual cup. 125 Doctors were surveyed for this and following is the data analysis based on their responses.

The bar chart in Figure 24 shows the different menstrual products used by doctors who responded to our questionnaire. Many doctors have used more than one product. 113 doctors have used sanitary napkins, 51 doctors have used Menstrual Cups and 40 doctors have used tampons.



**Figure 24:** Use of menstrual products by doctors.

This ranking showed in the Table 10 reveals that the 125 doctors who responded to our questionnaire feel that Menstrual Cups are the safest menstrual protection method followed by Sanitary Napkins, Tampons (Bleached) and Tampons (Organic). This is because usage of cups drastically reduces the chances of Toxic Shock Syndrome, Vaginal Infec-

tion, Irritation and Allergy since the blood is collected and suspended in cup and rarely comes in contact with the skin. Whereas, in all other Menstrual Protection Methods, the underlying principle is absorption, which means that the discharge remains in contact with the skin throughout, leading to the problems listed above (Table 10).

Rank the following Products with respect to safety: doctor's opinion								
	1	2	3	4	5	6	Score	Safety Rank
Sanitary Napkins	20	22	12	8	34	29	476	2
Tampons (Bleached)	72	0	10	20	20	3	300	3
Tampons (Organic)	81	0	3	14	22	5	286	4
Menstrual Cups	18	0	1	4	69	33	580	1
Highest score possible=125 × 6=750								
Lowest score possible=125 × 1=125								

**Table 10:** Safety ranking of menstrual products.

This ranking from the Table 11 reveals that the 125 doctors who responded to our questionnaire feel that Menstrual Cups are the most hygienic menstrual protection method followed by Sanitary Napkins, Tampons (Bleached) and Tampons (Organic). This is due to the fact that the menstrual discharge remains in the purest form, untouched

by the air, in a menstrual cup, whereas, in all other methods, the discharge is absorbed, which may cause many issues like Irritation, Rashes, Vaginal Infection etc. Also, the material used to make Menstrual Cups is easy to wash, which makes Menstrual Cups more Hygienic as compared to other products (Table 11).

Rank the following Products with respect to Hygiene: Doctor's opinion								
	1	2	3	4	5	6	Score	Safety Rank
Sanitary Napkins	20	12	14	13	38	28	496	2
Tampons (Bleached)	72	0	9	17	25	2	304	3
Tampons (Organic)	81	0	4	15	21	4	282	4
Menstrual Cups	18	0	0	0	60	47	600	1
Highest score possible=125 × 6=750								
Lowest score possible=125 × 1=125								

**Table 11:** Hygiene ranking of menstrual products.

The ranking for value for money of menstrual products from Table 12 reveals that the 125 doctors who responded to our questionnaire feel that Menstrual Cups provide the maximum Value for Money followed by Sanitary Napkins, Tampons (Bleached) and Tampons (Organic). This

is because a single cup can be reused for around 7-10 years, depending on its usage. Whereas, all other menstrual protection methods cannot be reused (Table 12).

Rank the following Products with respect to Value for: doctor's opinion								
	1	2	3	4	5	6	Score	Safety Rank
Sanitary Napkins	20	26	18	17	25	19	433	2
Tampons (Bleached)	72	0	10	19	21	3	301	3
Tampons (Organic)	81	0	8	14	19	3	274	4

Menstrual Cups	18	0	2	20	45	40	569	1
Highest score possible=125 × 6=750 Lowest score possible=125 × 1=125								

**Table 12:** Menstrual products with respect to their value for money.

This ranking of leakage control from Table 13 reveals that the 125 doctors who responded to our questionnaire feel that Menstrual Cups provide maximum leakage control followed by Sanitary Napkins, Tampons (Bleached) and Tampons (Organic). This is because the menstrual discharge is collected in a vacuum chamber created by the seal of Men-

strual Cup and due to gravity the discharge remains inside the vacuum resulting in full leakage control. This is not possible with other methods because they are absorbent in nature, which may sometimes lead to leakage (Table 13).

Rank the following Products with respect to Leakage Control: Doctor's opinion								
	1	2	3	4	5	6	Score	Safety Rank
Sanitary Napkins	20	21	23	29	17	15	422	2
Tampons (Bleached)	72	0	6	22	21	4	307	3
Tampons (Organic)	81	0	3	18	19	4	281	4
Menstrual Cups	18	0	1	8	56	42	585	1
Highest score possible=125 × 6=750 Lowest score possible=125 × 1=125								

**Table 13:** Leakage control ranking of menstrual products.

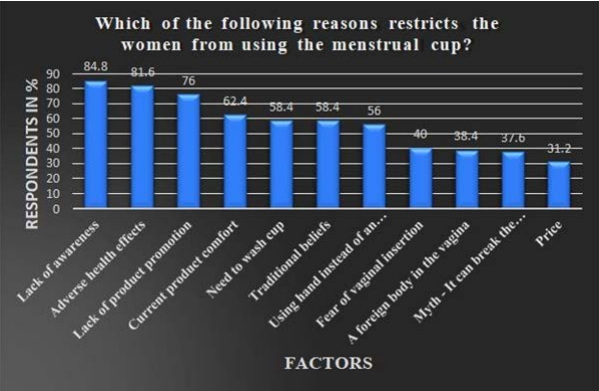
This ranking of comfort level and the ease of use from Table 14 reveals that the 125 doctors who responded to our questionnaire feel that Sanitary Napkins provide maximum Product Comfort and Ease of Use followed by Menstrual Cups, Tampons (Bleached) and Tampons (Organic). Since most of the doctors have not used the product them-

selves they feel that Sanitary Napkins are more comfortable to use than Menstrual Cups. However, the ones who have used the product have suggested saying that it takes some time to get used to the product and once the user gets into the habit of using it, they find it more comfortable than other Menstrual Protection Methods (Table 14).

Rank the following Products with respect to Product Comfort and Ease of use: doctor's opinion								
	1	2	3	4	5	6	Score	Product comfort and ease of use rank
Sanitary Napkins	20	9	10	16	33	37	519	1
Tampons (Bleached)	72	0	6	23	21	3	305	3
Tampons (Organic)	81	0	3	18	18	5	282	4
Menstrual Cups	18	0	29	29	29	19	485	2
Highest score possible=125 × 6=750 Lowest score possible=125 × 1=125								

**Table 14:** Product comfort and ease of use ranking of menstrual products.

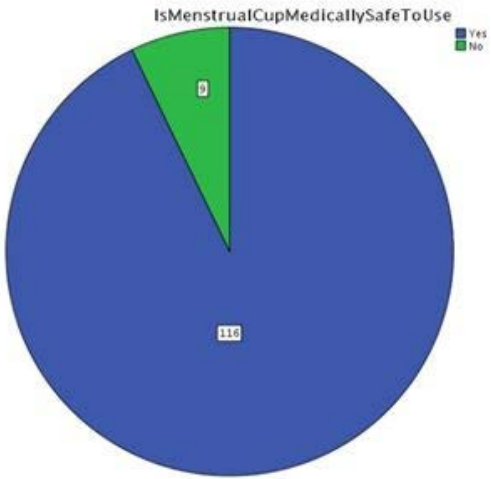
This bar chart from Figure 25 highlights the doctors' opinion on the factors which restrict women from using menstrual cups. Majority of the doctors feel it is the Lack of Awareness (106) that becomes the restraint. Other significant reasons highlighted by doctors are Adverse Health Effects (102), Comfortability with current product (100), Lack of product promotion/Advertisement (95), Needing to wash cup between uses (73), Traditional beliefs (73), Using your hands to change the cup (instead of an applicator) (70), A foreign body in the vagina (48), Myth-It can break the hymen (47), Fear of vaginal insertion (40), Price (39). Apart from 'lack of awareness', 'lack of product promotion' is also quite an influential factor, hence it contributes to the less usage of menstrual cup.



**Figure 25:** Reasons for restricted use of menstrual cups.

This pie chart from Figure 26 shows doctor's opinion on whether the cup is medically safe to use or not. 116 out of 125 doctors opined that the Menstrual Cup is safe to use. According to the survey, the men-

strual cup is medically safe to use as agreed by 98% of gynecologists and medical practitioners. Since, it is made of medical grade silicon it is not conducive for bacterial growth. Collection of menstrual blood instead of absorption makes it more hygienic compared to other sanitary products in the market.



**Figure 26:** Chart on safety of menstrual cup.

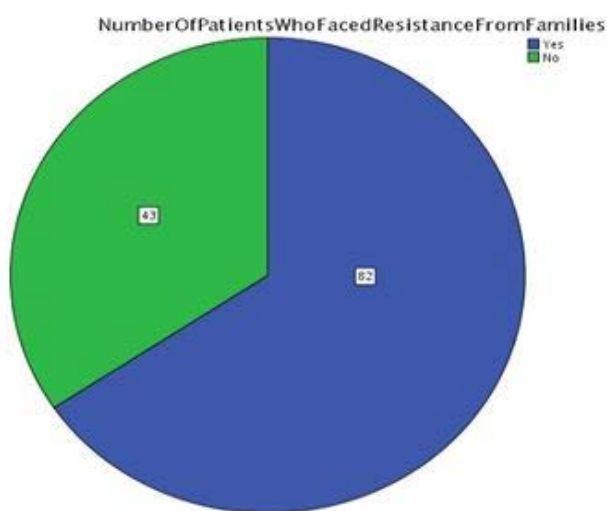
This pie chart from Figure 27 shows whether the patients faced resistance from their families on usage of Menstrual Cups. 82 doctors reported such cases. This again highlights the need of creating awareness in people's minds about the myths related to menstrual cups (Tables 15 and 16).

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Role of Advertisement as an Influential Factor	125	3.816	1.1872	0.1062

**Table 15:** T-Test on Importance of Advertisements (One-Sample Statistics).

One-Sample Test						
	Test value=3					
	t	df	Sig.(2-tailed)	Mean Difference	95% confidence interval of the difference	
					Lower	Upper
Role of Advertisement as an Influential Factor	7.685	124	0.0000000	0.816	0.606	1.026

**Table 16:** T-Test on Importance of Advertisements.



**Figure 27:** Chart on whether people faced resistance in using menstrual cup.

The following interpretations can be derived from the Tables 15 and 16:

One Sample T-Test

On a scale of 1-5, how much would you rank advertisement as a means of an influential factor in promoting menstrual cups?

Null hypothesis: Mean=3

**Alternate hypothesis:** The mean is greater or lesser than 3 or not equal to 3. Results: Significance value=0.000, which is less than 0.05

Therefore, we reject null hypothesis. Hence mean not equal to 3.

Mean is 3.816, which means according to the doctors, advertisement would definitely play an important role in promoting the menstrual cup. However, there are other factors too which are influential in promoting menstrual cups. Therefore, we can infer that, having awareness about the product is appreciably dependent on the advertisement.

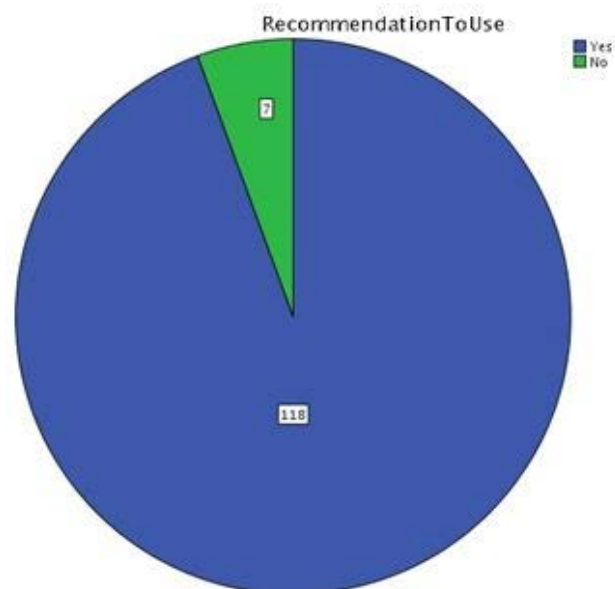
When asked about the disadvantages of menstrual cup over pads/tampons, it was the opinion of most doctors that the process of insertion and removal was a major disadvantage as it would be uncomfortable in the beginning. Washing cups between uses was another major disadvantage according to many. However, it was also highlighted that these issues ease off at a later point when a user gets used to the menstrual cup.

Gynecologists when asked about any case that reported side effects of using menstrual cups, 92% of doctors did not encounter any case. However, a few cases reported rashes and irritation. 3 cases reported Toxic shock syndrome and vaginitis after using menstrual cups.

99% doctors concur with the fact that menstrual cups are environment friendly and cost effective compared to non-biodegradable pads that cover landfills across 24 hectares in India alone and can take up to 500 to 800 years to decompose.

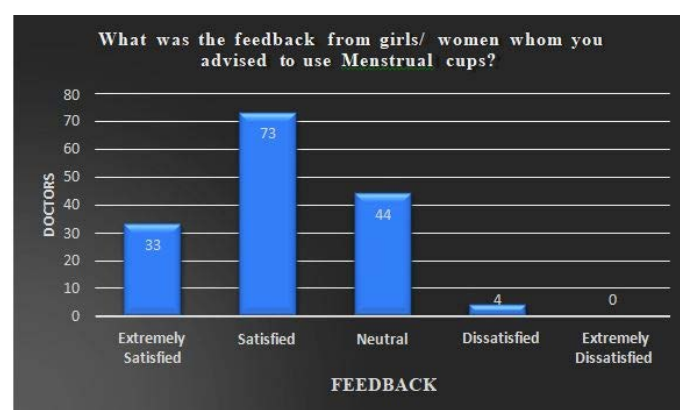
This pie chart from Figure 28 highlights doctor's recommendation to use menstrual cups. 118 out of 125 doctors recommend using menstrual cups whereas 7 doctors did not recommend. In the opinion of the

doctors, it was seen that hygiene issues and the myth related to using the product may be the biggest reason why women hold back from using menstrual cups.



**Figure 28:** Chart on whether doctors will recommend using menstrual cups.

As it is interpreted from the Figure 29 that doctors reported mixed feedback which they received from girls/women whom they advised to use Menstrual Cups. Large number of users was either 'satisfied' or had 'neutral' experience with Menstrual Cups. Some of the users were 'extremely satisfied' with their experience of using Menstrual Cups. Whereas, a minuscule number of users were 'dissatisfied' and none of the users were 'extremely satisfied'.



**Figure 29:** Feedback given by girls/women on advising to use menstrual cup.

### Target III-Manufacturers

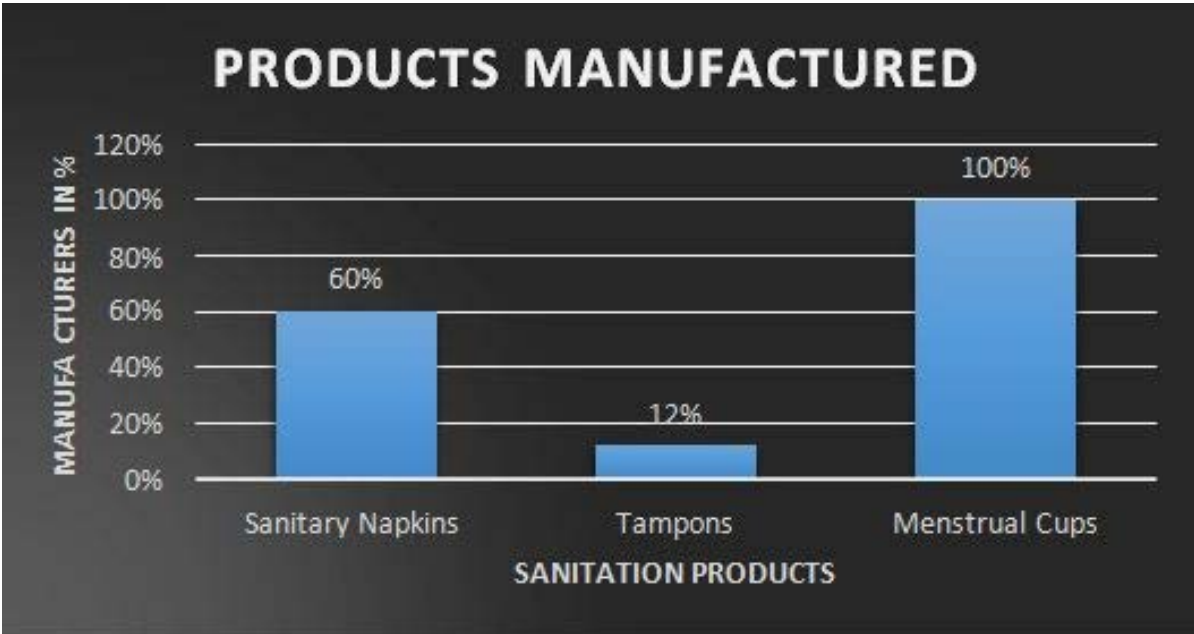
Another important target audience for our survey was the manufacturers who manufacture these menstrual cups along with other sanitation products. Understanding their perspective towards this product is very crucial as they are both the makers and the sellers of the menstrual cup. This gives an idea about not only the making of the product but

also the distinguishing features of the cup over the other products. 25 Manufacturers were surveyed for this and following is the data analysis based on their responses.

Figure 30 depicts the percentage of sanitary products manufactured by the 25 menstrual cup manufacturers.

We observe that tampons are manufactured the least with 12%, followed by sanitary napkins with 60% and menstrual cup as 100% since all of them were particularly menstrual cup manufacturers.

It is inferred from Figure 30 that in spite of them being cup manufacturers, the percentage of napkins manufactured by them is also high depicting the popularity of the product.



**Figure 30:** Sanitary products manufactured.

To understand which sanitary products are sold the most, moderate

and least we had conducted a ranking analysis on the software (Table 17).

	1	2	3	Score	Rank Sales
Sanitary Napkins	7	5	13	56	2 <sup>nd</sup>
Tampons	17	6	2	35	3 <sup>rd</sup>
Menstrual Cups	2	10	13	61	1 <sup>st</sup>
Highest possible value 25 × 3=75 Lowest possible value 25 × 1=25 1-Least, 2-Moderate, 3-Most					

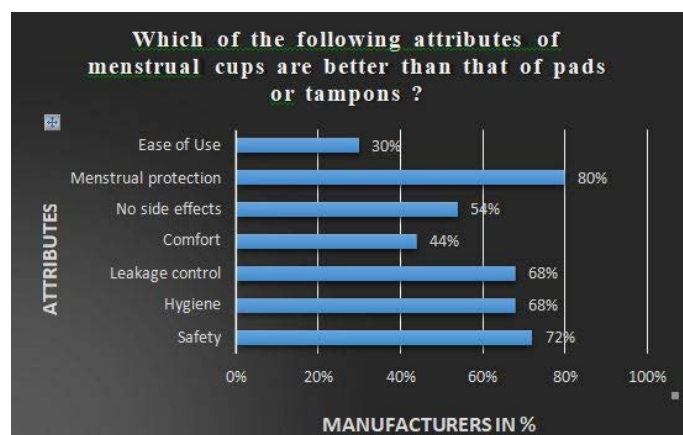
**Table 17:** Ranking the various menstrual sanitary products based on their sales (Menstrual Cup Manufacturers).

In the above Table 17, the number 1, 2 and 3 stands for least, moderate and the most sold products respectively.

Based on the number assigned and the frequency of the responses, a score was calculated in which the highest score indicated the most sold item while the lowest score indicated the least sold item.

It is inferred that amongst the three sanitary products, menstrual cup ranks first, followed by sanitary napkins and lastly by tampons. This shows that the menstrual cup manufacturers have the highest sales as compared to the other product.

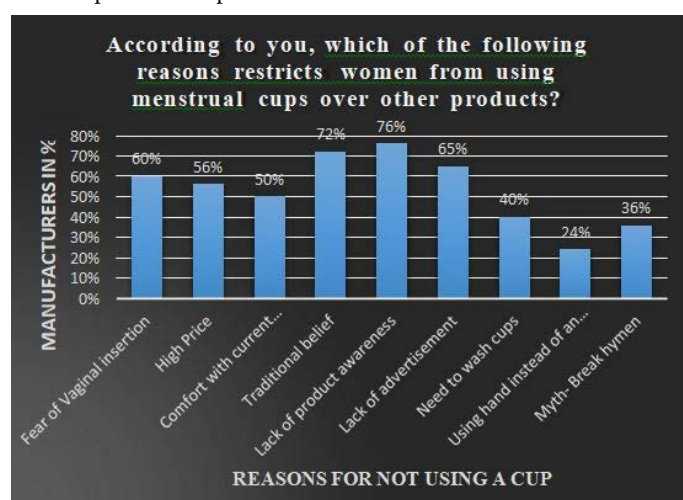
Figure 31 is the main highlight of the menstrual cup which showcases the better attributes of the cup in comparison to that of pads or tampons. The results are as follows Menstrual protection with the maximum percentage of 80%, followed by Safety with 72%, hygiene and leakage control each with 68%, No side effects with 54% and lastly the attributes related to comfort and ease of use as 44% and 30% each respectively. Therefore it is understood that apart from the usage ease and comfort, all the other essential factors are above average.



**Figure 31:** Advantages of menstrual cup over the conventional products.

This inference relates to the responses given by the menstruating women which mean that the one making the product and the one using it are the only people who can actually understand the benefits provided by the menstrual cup.

Figure 32 contains the most important question of this entire survey which states the reason that might restrict women from using the menstrual cup over other products.



**Figure 32:** Reasons restricting women from using the menstrual cup.

According to the manufacturers, lack of awareness and tradition belief rank the highest with 76% and 72% respectively, followed by lack of advertisement with 65%, fear of vaginal infection with 60%, high price with 56%, and comfort with current product as 50%. The other three factors like needing to wash cups 40%, myth about breaking the hymen with 36% and using your hand instead of an applicator with 24%, however small but they do restrict women from using a cup.

This analysis also gives a direct correlation between lack of awareness and lack of advertisement which can infer as lack of advertisement does have an impact on the lack of awareness of the product. This analysis also highlights that according to the manufacturers, traditional beliefs or the cultural unacceptance also restricts women from using a men-

strual cup.

According to the data gathered it was seen that the maximum demand of menstrual cups according to the 11 manufacturers is India. 6 manufacturers believe that Africa is the second most country with a huge demand of menstrual cups. 1 manufacturer also believed that USA also has a high demand for menstrual cups.

Talking about the different regions in those countries where the demand is most dense is as follows. 4% of the population mentioned Kenya, 4% of the population mentioned Sierra Leone and 4% of the population mentioned Nigeria, all of which are regions in Africa. 32% of the population mentioned urban area whereas 8% mentioned rural area as the densest. 4% of the population mentioned California as the ideal place for dense demand of menstrual cups.

For every manufacturer the quantity sold per month mostly varied

- 12 manufacturers (52.4% of the population) sold menstrual cups which ranged from 400 to 800.
- 4 manufacturers (17.4% of the population) sold 1000 cups per month.
- 2 manufacturers (8.6% of the population) sold menstrual cups ranging from 2500 to 5000.
- 1 manufacturer (4.3% of the population) sold 1500 cups per month.
- 1 manufacturer (4.3% of the population) sold 900 cups per month.
- 1 manufacturer (4.3% of the population) sold 200 cups per month.
- 1 manufacturer (4.3% of the population) sold 100 cups per month.

The Product Price sold by each manufacturer varied

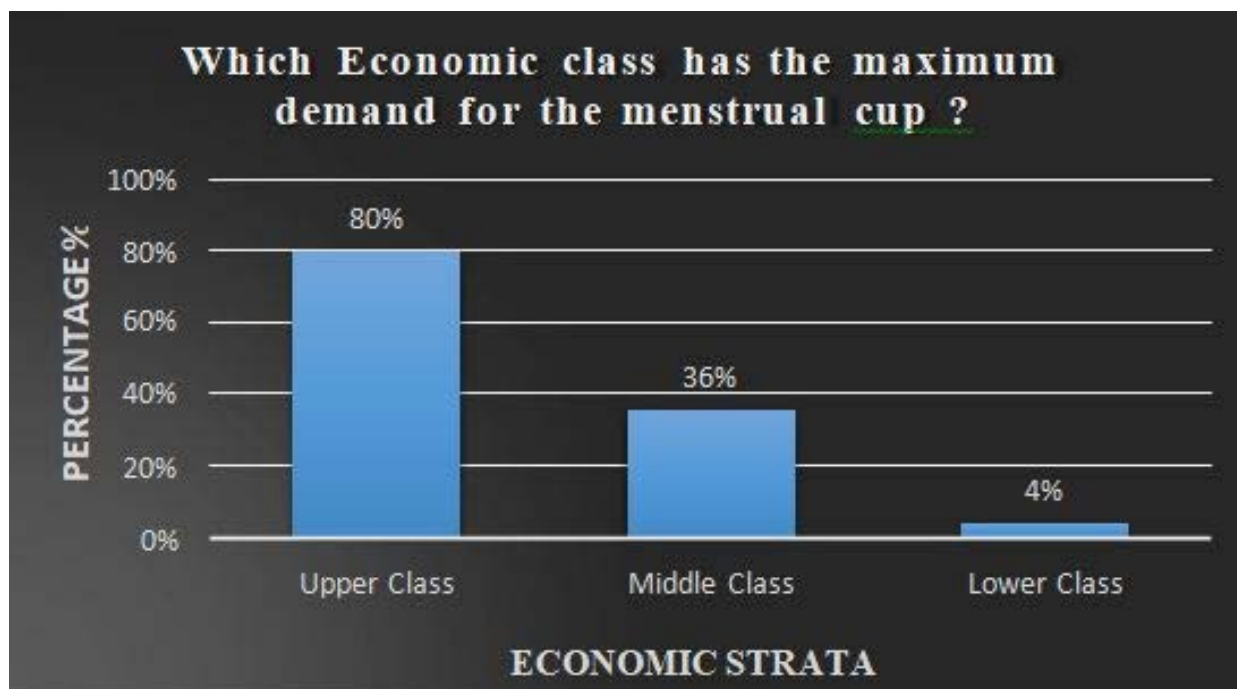
- 3 manufacturers sold menstrual cup at the price of Rs 100.
- 2 manufacturers sold at the price of Rs 500.
- 2 manufacturers sold at the price of Rs 350.
- 6 manufactures sold at price which ranged from Rs 150 to 300.
- 6 manufacturers sold at a price which ranged from Rs 60 to Rs 70.
- 1 manufacturer sold menstrual cup at the price of Rs 600.
- 1 manufacturer sold menstrual cup at the price of Rs 970.

According to the data, it was seen that all the age groups who buy the cup are from urban areas and some from semirural and hardly any from rural. One of the biggest factors is because people are not as educated and aware in rural areas compared to urban and semi-rural areas. Due to less awareness the demand and want to buy menstrual cups is automatically very less.

Figure 33 highlights the demand factor of the menstrual cup amongst the various economic strata. Economic class apparently plays a very vital role in buying of a menstrual cup. According to the manufacturers it was seen that 80% of the population (20 manufacturers) believed that the maximum demand for menstrual cups is in the Upper Class followed by 36% (9 manufacturers) believe it's the Middle Class and 4% (1 manufacturer) also believe that there is a very less but still preva-

lent demand of menstrual cup in the Lower Class. Reason stated by the manufacturers for this was the high price and lack of awareness of the cup as compared to the other products. The average cost of a menstrual cup was found to be between ₹ 100-₹ 500. However there were

few companies whose cups costs more than ₹ 500 as well. It is inferred that in spite of it being a one-time high priced investment, mostly only the upper class strata are able to afford the product and try it for an experience (Tables 18 and 19).



**Figure 33:** Maximum demand of menstrual cup based on economic strata.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Advertisement scaling Manufacturers	25	4.440	0.7681	0.1536

**Table 18:** Can the advertisement be influential in promoting the menstrual cup (One-Sample Statistics).

One-Sample Test						
	Test value=3					
	t	df	Sig. (2-tailed)	Mean Difference	95% confidence Interval of the difference	
					lower	Upper
Advertisement scaling Manufacturers	9.374	24	0.000	1.44	1.123	1.757

**Table 19:** Can the advertisement be influential in promoting the menstrual cup?

Tables 18 and 19 shows the results of one sample T-test performed on our dataset.

On a scale of 1-5, how influential would be the role of the advertisement in promoting the menstrual cup.

Null hypothesis: Mean=3

Alternate hypothesis: The mean is greater or lesser than 3 or not equal to 3.

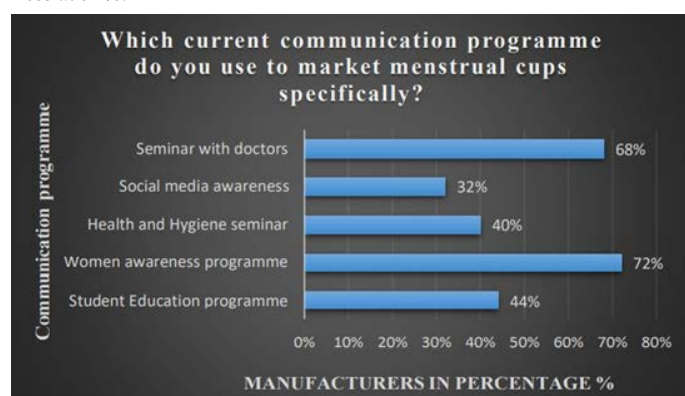
Results: Significance value=0.000, which is less than 0.05 Therefore, reject null hypothesis

Hence, Mean not equal to 3.

Mean is 4.44, which means according to the manufacturers too, advertisement would definitely play an important role in promoting the menstrual cup.

It is therefore inferred that Advertisement might not be the sole method for creating awareness amongst the people, but it definitely creates an impact in influencing the choice of product.

According to the data assembled through the survey, this bar chart in Figure 34, focuses on the communication programmers used to market menstrual cups. This particular question is significant since we have already concluded that lack of awareness and advertisement are the major reasons for less usage of menstrual cups therefore it is essential to market and target a good communication programmer that help women better comprehend and understand the usage of menstrual cups. From the above data, it was seen that the Manufacturers majorly targeted to the Women Awareness Programmer (72%) followed by Seminar with Doctors (68%). 44% targeted Student Education Programmer followed by Health and Hygiene Seminar at 40% and finally Social Media Awareness at 32%.



**Figure 34:** Current communication programmes used to market the menstrual cups.

It can be inferred and concluded from Figure 34, that larger number of women would attend a women awareness programmer or go to a doctor compared to visiting a social media awareness programmer or a student education programmer therefore this particular programmer (Women Awareness Programmer) to market the most rightly fits.

## Discussion and Conclusion

From all the data collected for our research, we conclude the following

for our project in terms of

### Menstruating women

Menstrual Cups are a revolutionary product. Compared to the existing sanitary products in the market, menstrual cups pose no health hazards on women. It doesn't cause any bacterial or yeast infection on prolonged use since it is made of unreactive medical grade silicon. Majority of women after their second use feel comfortable completely switching to menstrual cups.

### Doctors

Doctors (Gynecologists and General Physicians) have a collective opinion stating menstrual cups as a safe to use as a menstrual hygiene product. Doctors' recommendation and approval of this device hugely encourages women to switch to this product.

### Manufacturers

Lastly, we collected data from manufacturers to find out the shortfalls in menstrual cup manufacturing and its prevalence in the market. We found that since menstrual cup manufacturing in India is a small scale business, manufacturers find promotion on large scale difficult and financially challenging. Cumulative to the opinions of doctors and menstruating women, manufacturers too concede to the fact that menstrual cups are indeed a revolutionary product as they are sustainable and ecofriendly. Proper product awareness can help propagate its manifold benefits to people.

## Limitations and Future Research Directions

- The number of Menstrual Cup users for the research should be high and widespread.
- The survey should be extended to rural areas and not only the cities.
- The reason for the lack of advertisement should be tackled by attracting investments and funding to manufacturers.
- The COVID-19 Pandemic had restricted the movements thus there was very less of physical meet with the target population and majority of data was covered online.

## Recommendation

- Doctors should try to constantly recommend the use of Menstrual Cups to their patients, since their approval gives them confidence to try a new product.
- Doctors can verbally communicate the importance of menstrual cups over other sanitary products or create awareness via posters in the clinics or hospital premises.
- Manufacturers can try to create appropriate demand for their product via social media marketing to target the right audience.
- Manufacturers can create massive demand for menstrual cups by advertising it on media channels like TV and newspaper.

## Reference

1. Christian N, Kaiser R, Judith B (2020) Menstrual cup-associated toxic shock syndrome. *Eur J Case Rep Intern Med*. 7(10): 001825.

2. Beksinska ME, Smit J, Ross G, Catherine ST, Mei-ling TL, et al. (2015) Acceptability and performance of the menstrual cup in South Africa: A randomized crossover trial comparing the menstrual cup to tampons or Sanitary Pads. *Journal of women's health*. 24(2): 151- 158.
3. Howard C, Rose CL, Trouton K, Stamm H, Danielle M, et al. (2011) FLOW finding lasting options for women: Multicentre randomized controlled trial comparing tampons with menstrual cups. *ResearchGate*. 57: 208-215.
4. Barbara BN, Michael JO (2011) Preclinical, clinical, and over the counter postmarketing experience with a new vaginal cup: Menstrual collection. *J Womens Health*. 20(2): 303-311.
5. Health Insights (2021) 22 Top Questions on Menstrual Cups Answered by Flo Ob-Gyn. Flo.
6. Deepa S, Agrawal T, Teny A, Fathima FN (2019) Awareness, perceptions and practices regarding menstruation and menstrual hygiene among students of a college in Bengaluru Urban district, South India: A cross sectional study. *IJCMPh*. 6(3): 1126-1132.
7. Riya CR, Silpa MS, Vinnarasi B (2020) Buying intentions of menstrual cups among women in India. *Int J Adv Sci Technol*. 29(2): 13-24.
5. Monthly Income (approximate value) 6. Which of the following menstrual protection method do you use? (Checkbox Question)
  - a. Sanitary Napkins (Pads)
  - b. Tampons
  - c. Menstrual Cup
  - d. Cloth
7. Rank the following menstrual tools in the order of your preference with respect to Safety according to the given Likert Scale.

**Products:**

- a. Sanitary Napkins (Pads)
- b. Tampons
- c. Menstrual Cups
- d. Cloth

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

8. Rank the following menstrual tools in the order of your preference with respect to Hygiene according to the given Likert Scale.

**Products:**

- a. Sanitary Napkins (Pads)
- b. Tampons
- c. Menstrual Cups
- d. Cloth

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

9. Rank the following menstrual tools in the order of your preference with respect to Value For Money according to the given Likert Scale.

**Products:**

- a. Sanitary Napkins (Pads)
- b. Tampons

## Annexures

### Annexure 1: Questionnaire for Menstruating Women

#### Part 1:

1. What is your name?
2. Which age group do you belong to?
  - a. 13-22
  - b. 23-32
  - c. 33-42
  - d. 43-50
  - e. More than 50
3. Qualification
  - a. Less than Class 5
  - b. Higher Secondary Certificate
  - c. Under-Graduate
  - d. Graduate
  - e. Post Graduate
4. Work Occupation
  - a. Student
  - b. Housewife
  - c. Self-employed
  - d. Service
  - e. Other

c. Menstrual Cups

d. Cloth

**Likert Scale:**

a. Extremely Dissatisfied

b. Dissatisfied

c. Neutral

d. Satisfied

e. Extremely Satisfied

f. Not tried

10. Have you ever used a menstrual cup? (The response to this question determines whether the respondent is a cup user or a non-cup user. Selecting 'Yes' will redirect the respondent to part 2 of the questionnaire designed for Cup Users, whereas, 'No' will redirect the respondent to part 2 of the questionnaire designed for Non-Cup Users)

a. Yes

b. No

**Part 2: For cup users**

1. Rank the following attributes of the menstrual cup based on your experience on a scale of

1-5 (1-lowest; 5-highest)

a. Ease of insertion & removal of cup (1-Difficult; 5-Easy)

b. Safety (Have you experienced any problems/issues while using the cup?) (1-Not safe at all; 5-Quite safe)

c. Is the menstrual cup hygienic? (1-Unhygienic; 5-Quite hygienic)

d. Is it Comfortable to use (1-Uncomfortable; 5-Comfortable)

e. Does it cause any Leakage? (1-No leakage; 5-Some degree of leakage)

f. Does it cause any Odour? (1-Significant odour; 5-No odour)

g. Cleaning of cup after use (1-Difficult; 5-Easy) 2. Did you experience any of the following problems after using the menstrual cup? (Choose whichever applicable) (Checkbox Question)

a. Allergy

b. Irritation/Rashes

c. Vaginal infection

d. Toxic Shock Syndrome (TSS)

e. None

f. Other

3. What extra activities you can do using the cup freely which you were hesitant when using pads/tampons/cloth? (Choose whichever applicable) (Checkbox Question)

a. Sports activities like swimming, gym etc.

b. Sleeping comfortably at night

c. Other

4. Who influenced your choice of using a menstrual cup? (Choose whichever applicable) (Checkbox Question)

a. Doctor

b. Friends & Family

c. Awareness about the product

d. School Education

e. Magazines

f. Advertisement

g. You-tube or influencers

h. Other

5. Have you seen any Advertisement for menstrual cups?

a. Yes

b. No

6. On a scale of 1 to 5, how much would you rank Advertisement/Product promotion as an influential factor for Menstrual cups? (1-least influential; 5-most influential)

7. According to you what are the possible reasons for people not adopting menstrual cup as means of protection? (Choose whichever applicable) (Checkbox Question)

a. Price

b. Discomfort

c. Messy with own menstrual fluid

d. Lack of awareness

e. Traditional beliefs

f. Fear of vaginal insertion

g. Comfortable with the current product

h. Lack of product knowledge/awareness

i. Lack of product promotion

j. Needing to wash cup between uses

k. Using your hands to change the cup (instead of an applicator)

l. A foreign body in the vagina

m. Myth - It can break the hymen

n. Other

8. Please describe your experience using menstrual cups briefly.

9. Would you recommend using a menstrual cup to others?

a. Yes

b. No

## Part 2: For non-cup users

Description of Cups along with a Picture of Menstrual Cup: A menstrual cup is a feminine hygiene device which is inserted into the vagina during menstruation. Its purpose is to collect menstrual fluid and prevent its leaking onto clothes. One cup may be reusable for up to 10 years. This makes their long-term cost lower than that of disposable tampons or pads, though the initial cost is higher.

1. Who influenced your choice of using a pad/tampon/cloth? (Choose whichever applicable) (Checkbox Question)

a. Doctor

b. Friends & Family

c. Awareness about the product

d. School Education

e. Magazines

f. Advertisement

g. You-tube or influencers

h. Other

2. What activities you feel hesitant participating in while using pads/tampons/cloth? (Choose whichever applicable) (Checkbox Question)

a. Sports activities like swimming, gym etc.

b. Sleeping comfortably at night

c. Other

3. Did you experience any of the following problems after using the pad/tampon/cloth? (Choose whichever applicable) (Checkbox Question)

a. Allergy

b. Irritation/Rashes

c. Vaginal infection

d. Dryness

e. Toxic Shock Syndrome (TSS)

f. None

g. Other

4. Which of the following reasons restrict you from using menstrual cups? (Choose whichever applicable) (Checkbox Question)

a. Fear of vaginal insertion

b. Price of the product

c. Comfortable with the current product

d. Traditional belief

e. Lack of product knowledge/awareness

f. Lack of product promotion

g. Needing to wash cup between uses

h. Using your hands to change the cup (instead of an applicator)

i. A foreign body in the vagina

j. Myth - It can break the hymen

k. Other

5. A menstrual cup is a menstrual management product you insert into your vagina. Is this culturally acceptable according to you and your culture/religion?

a. Yes

b. No

6. A menstrual cup is a menstrual management product which is more cost effective in a longer run (can be reused for up to 5-7 years) and also causes lesser pollution. Would you want to try the product?

a. Yes

b. No

7. Have you seen any Advertisement for menstrual cups?

a. Yes

b. No

8. On a scale of 1 to 5, how much would you rank Advertisement/Product promotion as an influential factor for Menstrual cups? (1- Least influential; 5- Most influential)

9. Are you completely aware of the benefits or attributes provided by the menstrual cups?

a. Yes

b. No

10. Do you think there is any negative thing about using a menstrual cup? Please describe briefly.

## Annexure 2: Questionnaire for Doctors

1. Please mention your name

2. Speciality

a. Gynaecologist

b. General Physician

c. Other

3. Which of the following menstrual products have you used? (Checkbox Question)

a. Sanitary Napkins (Pads)

b. Tampons

c. Menstrual Cups

4. Rank the following products with respect to Safety according to the given Likert Scale Products:

a. Sanitary Napkins

- b. Tampons (Bleached)
- c. Tampons (Organic)
- d. Menstrual Cups

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

5. Rank the following products with respect to Hygiene according to the given Likert Scale

**Products:**

- a. Sanitary Napkins
- b. Tampons (Bleached)
- c. Tampons (Organic)
- d. Menstrual Cups

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

6. Rank the following products with respect to Value for Money according to the given Likert Scale.

**Products:**

- a. Sanitary Napkins
- b. Tampons (Bleached)
- c. Tampons (Organic)
- d. Menstrual Cups

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

7. Rank the following products with respect to Leakage Control according to the given Likert Scale.

ing to the given Likert Scale.

**Products:**

- a. Sanitary Napkins
- b. Tampons (Bleached)
- c. Tampons (Organic)
- d. Menstrual Cups

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

8. Rank the following products with respect to Product Comfort & Ease of Use according to the given Likert Scale.

**Products:**

- a. Sanitary Napkins
- b. Tampons (Bleached)
- c. Tampons (Organic)
- d. Menstrual Cups

**Likert Scale:**

- a. Extremely Dissatisfied
- b. Dissatisfied
- c. Neutral
- d. Satisfied
- e. Extremely Satisfied
- f. Not tried

9. According to you, which of the following reasons restricts the women from using the menstrual cup? (Checkbox Question)

- a. Price
- b. Lack of awareness
- c. Adverse health effects
- d. Traditional beliefs
- e. Comfortable with the current product
- f. Needing to wash cup between uses
- g. Using your hands to change the cup (instead of an applicator)
- h. Lack of product promotion/Advertisement
- i. A foreign body in the vagina
- j. Myth - It can break the hymen

k. Other

10. How often do women visit you with problems regarding the sanitation of any sanitary product?

**Products:**

- a. Sanitary Napkins
- b. Tampons
- c. Menstrual Cups

**Likert Scale:**

- a. Frequently
- b. Once in a while
- c. None yet

11. Is menstrual cup medically safe to use? and why?

12. Have the patients faced any kind of resistance due to traditional belief from their families on the usage of Menstrual cups?

- a. Yes
- b. No

13. On a scale of 1-5, how much would you rank advertisement as a means of an influential factor in promoting menstrual cups? (1- Least influential; 5- Most influential)

14. State few disadvantages of the menstrual cups over pads/tampons (if any)

15. Have you encountered any case reporting side effects due to usage of menstrual cups? Please elaborate.

16. What are your views on menstrual cups being more environmental friendly and cost effective than sanitary pads?

17. As a doctor, would you recommend your patients to use menstrual cups?

- a. Yes
- b. No

18. If Not, what do you think are the probable reasons? 19. What was the feedback from girls/women whom you advised to use Menstrual cups? (Checkbox Question)

- a. Extremely Satisfied
- b. Satisfied
- c. Neutral
- d. Dissatisfied
- e. Extremely Dissatisfied
- f. Other

**Annexure 3: Questionnaire for Manufacturers**

1. Name & Location of your company

2. Which of the following menstrual products are manufactured by

your company? (Checkbox Question)

- a. Sanitary Napkins (Pads)
- b. Tampons
- c. Menstrual Cups
- d. Other

3. Which of the following products are sold the most, moderate and least?

**Products:**

- d. Sanitary Napkins (Pads)
- e. Tampons
- f. Menstrual Cups

**LIKERT SCALE:**

- d. Most
- e. Moderate
- f. Least

4. What is the manufacturing cost and MRP of following products? (Mention in value)

- a. Menstrual cup
- b. Sanitary pad
- c. Tampon

5. Which of the following attributes of menstrual cups are better than that of pads or tampons? (Checkbox Question)

- a. Safety
- b. Hygiene
- c. Leakage Control
- d. Comfort
- e. No side effects
- f. Menstrual Protection
- g. Ease of use
- h. Other

6. According to you, which of the following reasons restricts women from using menstrual cups over other products? (Checkbox Question)

- a. High price
- b. Lack of product awareness
- c. Traditional beliefs
- d. Comfort with the current product
- e. Fear of vaginal insertion
- f. Messiness
- g. A foreign body in vagina

- h. Lack of product promotion
- i. Needing to wash cup between uses
- j. Using your hands to change the cup (instead of an applicator)
- k. Myth - It can break the hymen
- l. Other

7. Where is the demand for menstrual cups most dense? (Select the most appropriate option for the following sub questions)

- a. Which Countries have the maximum demand for the menstrual cups?
- b. Which Region in the above countries have the maximum demand for the cups?
- c. Approximate Quantity sold per month (units)
- d. Product Price
- e. Which Age group gradient has the maximum demand for the menstrual cup?

**Age Group:**

- i. 13-23 years
- ii. 24-34 years
- iii. 34-45 years
- iv. Above 45 years

**Area:**

- i. Urban
- ii. Semi-Rural

- iii. Rural

f. Which Economic class has the maximum demand for the menstrual cup? (Checkbox Question)

- i. Upper Class
- ii. Middle Class
- iii. Lower Class

8. On a scale of 1-5, what is the role of advertisement in promoting menstrual cups? (1 - Least influential; 5 - Most influential)

9. State few reasons for the poor sale of menstrual cups over other products in general.

10. Why do you think menstrual cup is not on the market? Why is it not a common and a well-known product?

11. Which current communication programme do you use to market menstrual cups specifically? (Checkbox Question)

- a. Student Education programme
- b. Women awareness programme
- c. Health and Hygiene seminar
- d. Social media awareness
- e. Seminar with doctors
- f. Other

12. What do you think it would take to make the menstrual cup more popular? How could you spread the awareness more efficiently?


13. Do you communicate with the government about the benefits of the menstrual cups over other products and subsequent recommendation?

**Author Affiliations**

[Top](#)

Department of Management, Shobhaben Pratapbhai Patel School of Pharmacy and Technology Management, India

**Submit your next manuscript and get advantages of SciTechnol submissions**

- ❖ 80 Journals
- ❖ 21 Day rapid review process
- ❖ 3000 Editorial team
- ❖ 5 Million readers
- ❖ More than 5000 
- ❖ Quality and quick review processing through Editorial Manager System

SUBMIT YOUR NEXT MANUSCRIPT AT • [WWW.SCITECHNOL.COM/SUBMISSION](http://WWW.SCITECHNOL.COM/SUBMISSION)