

## “A Comparative Study to Assess the Knowledge Regarding Usage of Menstrual Cup among Adolescent Girls in Selected Schools from Tribal and Rural Areas.”

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### KEYWORDS

Menstrual cup, Adolescent girls, Knowledge, Menstrual hygiene, Rural area, Tribal area.

### ABSTRACT:

**Background:** Menstrual hygiene is a vital component of adolescent health. The menstrual cup, a reusable and eco-friendly alternative to sanitary pads, has gained global attention. However, awareness and acceptance remain limited, especially among adolescent girls in rural and tribal regions.

**Aim:** To assess and compare the knowledge regarding the usage of menstrual cup among adolescent girls in selected schools from tribal and rural areas.

**Methods:** A descriptive comparative research design was adopted. The study was conducted among adolescent girls aged 11–18 years from selected schools in tribal and rural areas. A structured questionnaire was used to assess knowledge on menstrual cup usage, including definition, insertion, removal, hygiene, and benefits. Data were analyzed using descriptive and inferential statistics.

**Results:** The findings revealed that overall knowledge regarding menstrual cup usage was low among both groups. However, rural adolescent girls showed slightly higher mean knowledge scores compared to their tribal counterparts. The difference in knowledge scores between the two groups was statistically significant ( $p < 0.05$ ).

**Conclusion:** The study concluded that knowledge regarding menstrual cup usage among adolescent girls is inadequate, particularly in tribal areas. Health education programs focusing on menstrual hygiene management and sustainable menstrual products should be implemented in schools to improve awareness and acceptance.

### 1. Introduction

Menstruation is a natural physiological process experienced by adolescent girls and women of reproductive age. Despite being a normal function, menstruation is often surrounded by myths, taboos, and poor hygiene practices, particularly in rural and tribal areas. Inadequate menstrual hygiene management can lead to reproductive tract infections, school absenteeism, and psychological discomfort.<sup>1</sup>

Traditional menstrual products like sanitary pads and cloth are commonly used; however, these are either non-

biodegradable or unhygienic when reused. The menstrual cup offers a sustainable, cost-effective, and eco-friendly alternative. It is made of medical-grade silicone, is reusable for several years, and ensures hygienic menstrual management.<sup>2</sup>

Despite its benefits, the menstrual cup remains underutilized in India, particularly among adolescent girls due to lack of knowledge, misconceptions, and cultural barriers. Hence, this study aims to compare the knowledge regarding menstrual cup usage among



adolescent girls studying in selected schools from tribal and rural areas.<sup>3</sup>

Adolescent girls in India face significant challenges related to menstrual hygiene due to lack of awareness, inadequate facilities, and social stigma. Research evidence suggests that only a small percentage of Indian women use menstrual cups, mainly due to ignorance and misconceptions about safety and comfort.<sup>4</sup>

Rural and tribal girls often rely on unhygienic practices, increasing their risk of infections. Considering the environmental and economic advantages of menstrual cups, it becomes imperative to promote their usage through awareness and education. However, to design effective educational interventions, it is essential to understand the existing level of knowledge in different communities.<sup>5</sup>

This study, therefore, focuses on assessing and comparing the knowledge regarding menstrual cup usage among adolescent girls in tribal and rural schools, providing valuable insight for community health nurses, educators, and policymakers.

## 2. Objectives

1. To assess the level of knowledge regarding menstrual cup usage among adolescent girls in selected schools from tribal & rural areas.
2. To compare the knowledge regarding menstrual cup usage between adolescent girls from tribal and rural areas.
3. To find an association between knowledge scores and selected demographic variables.

## HYPOTHESIS

H0- There is no significant differences in knowledge score regarding usage of menstrual cup among adolescent girls in selected schools from tribal and rural areas.

H1- There is a significant difference in knowledge score regarding usage of menstrual cup among adolescent girls in selected schools from tribal and rural areas.

## Methods:

**Research approach:** The research approach adopted for this study was quantitative research approach.

**Research design:** Exploratory Descriptive study design was used for current study.

## Setting:

Selected government and private schools located in tribal and rural regions.

## Population:

Adolescent girls aged 11–18 years studying in the selected schools.

## Sample Size and Sampling Technique:

A total of 200 adolescent girls (100 each from tribal and rural schools) were selected using purposive sampling.

## Inclusion criteria

- 1) Adolescent girls from tribal & rural areas.
- 2) Those who are willing to participate in study.

## Exclusion Criteria: -

- 1) Adolescent girls who are non-responsive & non-co-operative.
- 2) Those who are not present during data collection.

## Data Collection Tool:

A structured knowledge questionnaire consisting of two sections:

**Section I:** Demographic data (age, class, residence, source of menstrual knowledge, etc.)

**Section II:** Knowledge questionnaire (20 items) based on menstrual cup definition, insertion, removal, hygiene, duration of use, and benefits.

## Data Collection Procedure:

Permission was obtained from school authorities. The purpose of the study was explained, and consent was taken. The questionnaire was administered, and responses were collected in a classroom setting.

## Data Analysis:

Descriptive statistics (frequency, percentage, mean, SD) were used to describe data. Inferential statistics (t-test, chi-square test) were applied to compare knowledge and test associations.



**PILOT STUDY**

A pilot study was conducted on 19.06.2025 at the urban area, Pimpri, Pune-18.

**Results**

**Table 1: Description of samples (adolescent girls) based on their personal characteristics in terms of frequency and percentage. N=100, 100**

Demographic variable	Rural		Tribal	
	Freq	%	Freq	%
<b>Age</b>				
11-14 years	21	21%	27	27%
15-18 years	79	79%	73	73%
<b>Standard</b>				
5 to 7	23	23%	23	23%
8 to 10	77	77%	77	77%
<b>Type of family</b>				
Nuclear	44	44%	50	50%
Joint	56	56%	50	50%
<b>Area of living</b>				
Tribal	0	0%	100	100%
Rural	100	100%	0	0%
<b>Age of menarche</b>				
11-12 years	16	16%	19	19%
13-14 years	33	33%	34	34%
15-16 years	51	51%	47	47%
<b>Menstrual flow</b>				
Regular(4-5days)	69	69%	69	69%
Irregular(2-3days)	31	31%	31	31%

<b>Menstrual products do you currently use</b>				
Sanitary pads	72	72%	75	75%
Menstrual cup	0	0%	0	0%
Cloth pads	28	28%	25	25%
Other	0	0%	0	0%
<b>Satisfied are you with your current menstrual products</b>				
Extremely satisfied	24	24%	57	57%
Satisfied	35	35%	17	17%
Dissatisfied	33	33%	26	26%
Extremely dissatisfied	8	8%	0	0%
<b>Experienced menstrual-related health issues</b>				
Heavy bleeding	15	15%	19	19%
Irregular and infrequent	12	12%	19	19%
Painful	65	65%	44	44%
Other	8	8%	18	18%
<b>Where did you first heard about menstrual cups</b>				
Family members	1	1%	0	0%
Friends	20	20%	32	32%
Healthcare providers	61	61%	64	64%
Other	18	18%	4	4%



**Figure 1: Data Analysis related to knowledge regarding usage of menstrual cup among adolescent girls in selected schools from tribal and rural areas.**

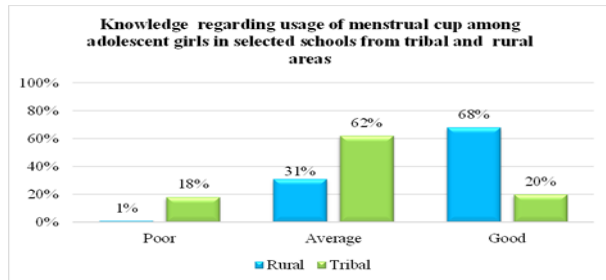
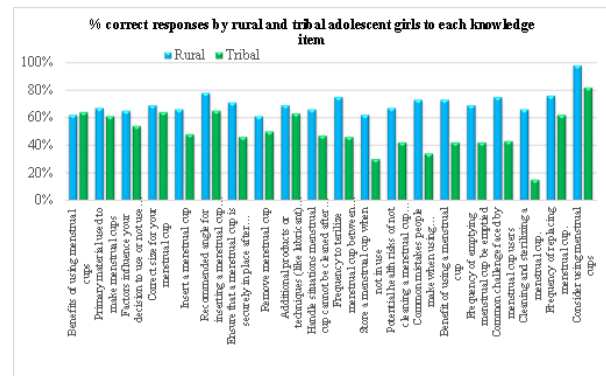


Fig 1 shows that, in rural group, 1% of the adolescent girls had poor knowledge, 31% of them had average knowledge and 68% of them had good knowledge regarding menstrual cup whereas in tribal group, 18% of the adolescent girls had poor knowledge, 62% of them had average knowledge and 20% of them had good knowledge regarding menstrual cup.

**Table 2: Two sample z-test for the comparison of the knowledge among adolescent girls regarding usage of menstrual cup in selected schools from tribal and rural areas. N=100, 100**

	MEAN	SD	Z	P-VALUE
RURAL	14.08	3.07	8.3	0
TRIBAL	10	3.81		

Table 2 shows that, the researcher applied two sample z-test for the comparison of knowledge among adolescent girls regarding usage of menstrual cup in selected schools from tribal and rural areas. Average knowledge score among adolescent girls from rural area is 14.08 which is 10.00 in tribal group. Z-value for this test was 8.3. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. It is evident that the adolescent girls from rural group had significantly more knowledge regarding menstrual cups than that among adolescent girls from tribal group.



**Figure 2: Knowledge item analysis**

**Table 3: Fisher’s exact test for the association between knowledge score regarding menstrual cup among rural adolescent girls with selected demographic variables**

Demographic variable		Knowledge			p-value
		Poor	Average	Good	
Age	11-14 years	4	19	4	0.625
	15-18 years	14	43	16	
Standard	5 to 7	3	16	4	0.749
	8 to 10	15	46	16	
Type of family	Nuclear	8	30	12	0.636
	Joint	10	32	8	
Age of menarche	11-12 years	3	14	2	0.714
	13-14 years	6	19	9	
	15-16 years	9	29	9	
Menstrual flow	Regular(4-5days)	10	44	15	0.243
	Irregular(2-3days)	8	18	5	
Menstrual products do you currently use	Sanitary pads	16	45	14	0.346
	Cloth pads	2	17	6	
Satisfied are you with your	Extremely satisfied	12	33	12	0.66



current menstrual products	Satisfied	1	12	4	
	Dissatisfied	5	17	4	
Experienced menstrual-related health issues	Heavy bleeding	4	11	4	0.847
	Irregular and infrequent	2	13	4	
	Painful	7	27	10	
	Other	5	11	2	
Where did you first heard about menstrual cups	Friends	7	19	6	0.85
	Healthcare providers	10	41	13	
	Other	1	2	1	

Table 3 shows that, p-values corresponding to age and standard were small (less than 0.05), the demographic variables age and standard were found to have significant association with the knowledge regarding menstrual cup among rural adolescent girls.

**Table 4: Fisher’s exact test for the association between knowledge score regarding menstrual cup among Tribal adolescent girls with selected demographic variable N=100**

Demographic variable		Knowledge			p-value
		Poor	Average	Good	
Age	11-14 years	1	15	5	0.000
	15-18 years	0	16	63	
Standard	5 to 7	1	12	10	0.005
	8 to 10	0	19	58	
Type of family	Nuclear	0	14	30	1.000
	Joint	1	17	38	
Age of menarche	11-12 years	0	9	7	0.053

	13-14 years	1	10	22	
	15-16 years	0	12	39	
Menstrual flow	Regular(4-5days)	1	23	45	0.648
	Irregular (2-3days)	0	8	23	
Menstrual products do you currently use	Sanitary pads	1	25	46	0.447
	Cloth pads	0	6	22	
Satisfied are you with your current menstrual products	Extremely satisfied	1	9	14	0.411
	Satisfied	0	12	23	
	Dissatisfied	0	7	26	
	Extremely dissatisfied	0	3	5	
Experienced menstrual-related health issues	Heavy bleeding	1	2	12	0.210
	Irregular and infrequent	0	4	8	
	Painful	0	21	44	
	Other	0	4	4	
Where did you first heard about	Family members	0	0	1	0.926
	Friends	0	5	15	
	Healthcare	1	20	40	



menstrual cups	providers				
	Other	0	6	12	

Table 4 shows that, all the p-values were large (greater than 0.05), none of the demographic variables were found to have significant association with the knowledge regarding menstrual cup among tribal adolescent girls.

**Discussion**

The study revealed inadequate knowledge regarding menstrual cup usage among both rural and tribal adolescent girls, aligning with previous studies conducted in various parts of India that highlighted low awareness and cultural resistance to menstrual cups. The slightly higher knowledge among rural girls may be attributed to better access to mass media and health education initiatives.

There is a strong need for community-based awareness programs and school health education sessions emphasizing safe menstrual practices and sustainable menstrual products.

**CONCLUSION:**

The study concluded that knowledge regarding menstrual cup usage among adolescent girls in both rural and tribal areas is inadequate, with tribal girls showing significantly lower awareness. Targeted educational programs and menstrual hygiene campaigns can enhance awareness, break myths, and promote eco-friendly menstrual practices.

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