



To Pad or Not to Pad: A Statistical Survey on Menstrual Health and Hygienic Sanitation

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Abstract:

Menstruation and menstrual practices still face many social, cultural, and religious restrictions which are a big barrier in the path of menstrual hygiene management. In many parts of the country especially in rural areas girls are not prepared and aware about menstruation so they face many difficulties and challenges at home, schools, and work places.

A number of programmes have recently been launched to popularise the use of sanitary pads among poor women in progressing countries. In this light, we review the prevailing menstrual practices in different contexts across the Kolhapur, as well as the initiatives undertaken to improve sanitary care. We also report findings from a study amongst women in Kolhapur. We draw upon these results to comment on better sanitary care for women slum dwellers in a rapidly urbanising context.

Keywords: Menstrual, health, hygienic, sanitation

Introduction:

In many developing countries, a culture of silence surrounds the topic of menstruation and menstruation related issues, as results many young girls lack appropriate and sufficient information regarding menstruation and menstrual hygiene. Menarche is an important milestone in the life of a girl which signifies the onset of fertility in a woman.

While reviewing literature, we found that little, in accurate, or incomplete knowledge about menstruation is a great obstacle in the path of personal and menstrual hygiene management. Girls and women have very less or no knowledge about reproductive swathe infections caused due to lack of knowledge of personal hygiene during menstruation time. In rural areas, women do not have access to sanitary products or they know very little about the types and method of using them or are unable to afford such products due to high cost. So, they mostly rely on reusable cloth pads which they wash and use again. Needs and requirements of the adolescent girls and women are ignored despite the fact that there are major developments in the area of water and sanitation. Women manage menstruation differently when they are

at home or outside; at homes, they dispose of menstrual products in domestic wastes and in public toilets and they flush them in the toilets without knowing the consequences of choking. So, there should be a need to educate and make them aware about the environmental pollution and health hazards associated with them. Implementation of modern techniques like incineration can help to reduce the waste. Also, awareness should be created to emphasize the use of reusable sanitary products or the natural sanitary products made from materials like banana fibre, bamboo fibre, sea sponges, water hyacinth, and so on.

In this project we studied prevailing situation of women and girls from slum, rural and urban areas. We investigated perception as well as behaviour on the use of sanitary pads during menstruation.

Objectives:

- To evaluate menstrual awareness and health care needs among women and girls.
- To evaluate the type of materials used during menstruation.
- To estimate commonness of menstrual disorders, acceptance of sanitary pads and their inducements among women in selected areas of Kolhapur district.
- To investigate the knowledge and awareness about various environmental issues.

Statistical Tools

- Tests: Chi-Square test for independence, two sample proportion test, K-S test.
- Other Statistical methods: ANOVA, Coefficient of association.
- Software: 1) R-software 2) MS-EXCEL

Methodology

A cross sectional study conducted among women and girls in Kolhapur district from various areas by simple random sampling. A total 400 women and girls from slum, rural, urban areas between age group of 13-45 and above were surveyed in this study.

Data was collected by using pre-designed, pre-tested Questionnaire. The questionnaire contains 20 questions which reflect on the various aspects of menstrual hygiene practices and use of sanitary pads. The data was entered and analysed by using appropriate statistical tools and tests.

We collected information of 48 women from slum area, 208 women from rural area and 144 women from urban area.

For slum area, we considered following areas from Kolhapur district:

1. Sadar bazar area
2. Vichare Mal

For rural area, we considered following villages from Kolhapur district:

1. Abdullat

2. Chandgad
3. Washi

For urban area, we considered following areas from Kolhapur district:

1. Tarabai Park
2. Kasaba Bawada
3. Gadhinglaj

Statistical Analysis

Testing of hypothesis

a) Colligation and association between environmental awareness and buying biodegradable sanitary pads:

Buying biodegradable pads	Environmental awareness	
	Yes	No
Yes	70	19
No	150	71

Test Statistic:

Coefficient of association is,

$$Q = \frac{\{(AB)(\alpha\beta) - (A\beta)(\alpha B)\}}{\{(AB)(\alpha\beta) + (A\beta)(\alpha B)\}} = 0.2710$$

Coefficient of colligation is,

$$Y = \frac{\sqrt{(AB)(\alpha\beta)} - \sqrt{(A\beta)(\alpha B)}}{\sqrt{(AB)(\alpha\beta)} + \sqrt{(A\beta)(\alpha B)}} = 0.1381$$

b) Chi-square test for independence of age and awareness about menstrual hygiene among females:

Hypothesis:

H_0 = Age and awareness about menstrual hygiene is independent

H_1 = Age and awareness about menstrual hygiene is not independent

$$\chi^2_{\text{Cal}} = 8.064149 \quad \text{and} \quad \chi^2_{\text{table}} = 12.59158724$$

Conclusion: Age and awareness about menstrual hygiene is independent.

c) Proportion test for brands of sanitary pads used by females from various areas during menstruation (Rural and Urban):

Sample size of women in rural area = $n_1 = 208$

Sample size of women in urban area = $n_2 = 144$

Sample proportion of women in rural area $p_1 = 0.3221$

Sample proportion of women in urban area $p_2 = 0.4375$

$$\hat{p} = 0.3693 \quad \hat{q} = 0.6306$$

$$H_0: P_1 = P_2 \quad \text{Vs} \quad H_0: P_1 \neq P_2$$

$$Z = \frac{p_1 - p_2}{\sqrt{\hat{p} \cdot \hat{q} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} = 0.2058$$

$$Z_{\alpha/2} = 1.96$$

d) Kolmogorov Smirnov test (K-S test):

H_0 : Both samples are come from same population.

H_0 : Both samples are not come from same population.

Test Statistic:

$$D_{cal} = 0.0219 \quad D_{tab} = 0.1474$$

Concluding Remarks:

Menstrual health and hygiene should be promoted and supported by executing a course on menstrual hygiene management. Some social media also play the crucial role to make the awareness about safety menstrual products in girls and women. Some companies and agencies should be given subsidies on menstrual products so every girl/women can afford them easily.

From above analysis we conclude that, Most of the females (98%) disposed the used sanitary pad by wrapping it in newspaper. Some women feel shy to talk about menstruation and some don't. About 58% female from rural area never found a hygienic public toilet whereas, female from slum (41%) and urban (42%) areas respectively never found hygienic public toilet. Almost 85% female don't visit to gynaecologist and least of them have menstrual disorders. 67% of women from rural area are positive about women empowerment while 35% women from slum and urban areas are negative about women empowerment.

Furthermore the environmental awareness and buying biodegradable pads are positively associated. The proportion of Whisper female users in rural and urban area is not equal.

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