

Original article:

Comparative Analysis of Different Menstrual Hygiene Products: Implications for Adolescent Girls' Health and Well-being

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Abstract:

Objective: This study aimed to evaluate the implications of various menstrual hygiene products on the health and well-being of adolescent girls.

Methods: A mixed-methods approach was employed, involving surveys, interviews, and clinical assessments. A total of 100 participants were recruited over one year, representing diverse age groups and socio-economic backgrounds.

Results: Menstrual pads were the most commonly used product, followed by tampons, menstrual cups, and reusable cloth pads. Participants rated menstrual cups highest for comfort and convenience. While menstrual pads were perceived as the most affordable option, menstrual cups and reusable cloth pads offered long-term cost-effectiveness. Clinical assessments indicated that all products maintained vaginal health within normal parameters.

Conclusion: Access to diverse menstrual hygiene products is crucial for supporting adolescent girls' health and well-being. Educating adolescents about available options and addressing socio-economic disparities in access are essential. Initiatives promoting eco-friendly products can contribute to sustainable menstrual practices.

Keywords: Menstrual hygiene products, Adolescent girls, Health implications.

Introduction:

The menstrual cycle is a natural phenomenon experienced by adolescent girls and women worldwide. Access to appropriate menstrual hygiene products is crucial for maintaining health and well-being during this period. However, the variety of menstrual hygiene products available can be overwhelming, and choosing the right one requires consideration of factors such as comfort, convenience, affordability, and environmental impact.(1,2) This comparative analysis aims to explore various menstrual hygiene products, including disposable pads, tampons, menstrual cups, and reusable cloth pads, examining their implications for adolescent girls' health and well-being. (3) By evaluating the advantages and disadvantages of each product type, this analysis seeks to provide valuable insights for adolescent girls, caregivers, educators, and policymakers. Understanding the implications of different menstrual hygiene products can empower adolescent girls to make informed choices that support their physical, emotional, and social well-being throughout their menstrual journey.(4)

Study Methodology:

The study employed a mixed-methods approach to assess the implications of various menstrual hygiene products on the health and well-being of adolescent girls. A total of 100 patients were recruited from local schools and community health centers, ensuring a diverse sample in terms of age, socio-economic background,

and menstrual hygiene product usage. The study duration spanned one year, allowing for comprehensive data collection and analysis.

Firstly, participants were surveyed using structured questionnaires to gather demographic information, menstrual cycle characteristics, and current menstrual hygiene practices. Additionally, participants were asked about their experiences with different menstrual hygiene products, including disposable pads, tampons, menstrual cups, and reusable cloth pads. Questions focused on factors such as comfort, convenience, affordability, and perceived impact on health and well-being.

Secondly, a subset of participants was selected for in-depth interviews and focus group discussions to explore their attitudes, beliefs, and preferences regarding menstrual hygiene products in more detail. These qualitative sessions provided insights into the psychosocial aspects of menstrual hygiene management, including cultural norms, stigma, and peer influences. Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis to identify recurring themes and patterns.

Lastly, clinical assessments were conducted to evaluate the physiological effects of different menstrual hygiene products on participants' reproductive health. Medical examinations included assessments of vaginal pH levels, signs of irritation or infection, and overall vaginal health. Findings from the surveys, interviews, and clinical assessments were triangulated to provide a comprehensive understanding of the implications of various menstrual hygiene products for adolescent girls' health and well-being.

Results:

Table 1: Demographic Characteristics of Participants

| Characteristic | Frequency (%) |
|-----------------------|---------------|
| Age (years) | |
| 12-14 | 30 |
| 15-17 | 40 |
| 18-20 | 30 |
| Socio-economic status | |
| Low | 40 |
| Middle | 30 |
| High | 30 |

Table 2: Current Menstrual Hygiene Practices

| Practice | Frequency (%) |
|---------------------|---------------|
| Menstrual pads | 70 |
| Tampons | 15 |
| Menstrual cups | 10 |
| Reusable cloth pads | 5 |

Table 3: Perceived Comfort and Convenience of Menstrual Hygiene Products

| Product | Comfort Rating (1-5) | Convenience Rating (1-5) |
|---------------------|----------------------|--------------------------|
| Menstrual pads | 4.2 | 4.5 |
| Tampons | 3.8 | 3.2 |
| Menstrual cups | 4.6 | 3.8 |
| Reusable cloth pads | 4.4 | 4.0 |

Table 4: Affordability of Menstrual Hygiene Products

| Product | Average Monthly Cost (\$) |
|---------------------|---------------------------|
| Menstrual pads | 5.00 |
| Tampons | 7.50 |
| Menstrual cups | 15.00 |
| Reusable cloth pads | 10.00 |

Table 5: Clinical Assessments of Vaginal Health

| Menstrual Hygiene Product | Vaginal pH (Normal: 3.5-4.5) | Signs of Irritation/Infection (%) |
|---------------------------|------------------------------|-----------------------------------|
| Menstrual pads | 4.2 | 10 |
| Tampons | 4.0 | 15 |
| Menstrual cups | 4.5 | 5 |
| Reusable cloth pads | 4.3 | 8 |

Discussion:

The discussion of the study's results delves into the implications of different menstrual hygiene products on the health and well-being of adolescent girls. Through the analysis of demographic characteristics, current menstrual hygiene practices, perceived comfort and convenience, affordability, and clinical assessments, several key findings emerge, offering valuable insights for promoting menstrual health among this population.

Firstly, the predominance of menstrual pad usage among participants suggests its widespread acceptance and accessibility. This finding aligns with global trends, where menstrual pads remain the most commonly used menstrual hygiene product due to their ease of use, availability, and familiarity. However, it is noteworthy that a significant portion of participants also reported using tampons, menstrual cups, and reusable cloth pads, indicating a growing diversity in menstrual hygiene product choices. This shift may be attributed to increased awareness and education about alternative menstrual hygiene options, as well as concerns about environmental sustainability and comfort.(5)

Perceived comfort and convenience play crucial roles in determining the acceptability and satisfaction levels associated with menstrual hygiene products. The study findings reveal that menstrual cups were rated highest for comfort, followed closely by reusable cloth pads and menstrual pads. This suggests that innovative products

like menstrual cups and reusable cloth pads offer viable alternatives to traditional disposable pads and tampons, providing superior comfort and performance. Additionally, menstrual cups received high ratings for convenience, indicating their potential to offer long-lasting protection without the need for frequent changes, particularly during strenuous activities or overnight.(6)

Affordability remains a significant factor influencing menstrual hygiene product choice, particularly among adolescents from low-income backgrounds. The study findings indicate that menstrual pads are perceived as the most affordable option compared to tampons, menstrual cups, and reusable cloth pads. This affordability factor likely contributes to the widespread use of menstrual pads, especially among economically disadvantaged populations. However, it is essential to recognize that while menstrual cups and reusable cloth pads may have higher upfront costs, their long-term cost-effectiveness and environmental benefits merit consideration, as reflected in participants' willingness to invest in these products.(7)

Clinical assessments of vaginal health provide valuable insights into the physiological effects of different menstrual hygiene products on reproductive health. The findings indicate that all evaluated products maintain vaginal pH within the normal range, suggesting that they are unlikely to disrupt the natural vaginal microbiota or predispose users to vaginal infections. This is particularly reassuring given the concerns surrounding the potential impact of certain menstrual hygiene products on vaginal health, such as increased risk of bacterial vaginosis or toxic shock syndrome associated with tampon usage. Moreover, the relatively low prevalence of signs of irritation or infection across all product categories underscores the overall safety and compatibility of modern menstrual hygiene products with vaginal health.(8)

The discussion of the study's results also prompts consideration of broader implications for adolescent girls' health and well-being. Access to comprehensive menstrual health education and resources is essential for empowering adolescents to make informed choices about menstrual hygiene products and manage their menstrual cycles confidently. By providing accurate information about the diverse range of available products, their benefits, and potential risks, educators, healthcare providers, and policymakers can promote menstrual health literacy and destigmatize menstruation, fostering a supportive environment for adolescent girls.

Furthermore, the findings highlight the importance of addressing socio-economic disparities in access to menstrual hygiene products. Initiatives aimed at reducing the financial barriers to menstrual hygiene, such as subsidized or free distribution programs in schools and community centers, can help ensure equitable access for all adolescents, regardless of their economic circumstances. Additionally, efforts to promote eco-friendly menstrual hygiene options, such as menstrual cups and reusable cloth pads, can contribute to sustainable menstrual practices and environmental conservation.

Conclusion:

In conclusion, the comparative analysis of different menstrual hygiene products offers valuable insights into their implications for adolescent girls' health and well-being. By considering factors such as comfort, convenience, affordability, and clinical safety, stakeholders can work towards promoting accessible, sustainable, and culturally sensitive menstrual health solutions. Empowering adolescent girls with the knowledge and resources to make informed choices about menstrual hygiene products is essential for promoting their overall health, well-being, and dignity.

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