



“Effect of Menstrual Health Education on School Sports Participation and Performance Among Adolescent Girls in India: A Mixed-Methods Study”

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Abstract

Background: Menstruation is a critical aspect of adolescent development, yet it remains stigmatized and poorly understood in many low-resource contexts. This study explores how menstrual health education (MHE) influences adolescent girls' participation and performance in school sports.

Methods: A mixed-methods study was conducted with 250 adolescent girls from six secondary schools (urban and rural). Quantitative data were collected via structured questionnaires before and after MHE sessions. Qualitative insights were obtained through focus group discussions (n=3) and interviews with teachers, coaches, and health educators (n=20).

Results: Post-MHE, regular participation in sports during menstruation increased from 32% to 67%, while absenteeism due to menstruation dropped from 61% to 28%. Physical comfort and emotional readiness scores significantly improved ($p < 0.01$). Qualitative findings revealed that MHE helped dispel myths, enhanced confidence, and encouraged open discussion. Persistent barriers included infrastructural deficiencies and cultural taboos.

Conclusion: MHE significantly improves girls' comfort, participation, and performance in school sports. Integration of menstrual education into school curricula, alongside infrastructural support and teacher training, is essential for fostering inclusive and equitable education environments.

Keywords: menstrual health education, adolescent girls, school sports, participation, performance, mixed-methods

1. Introduction

1.1 Background Adolescence is a pivotal developmental stage marked by significant physical and psychological changes. Menarche, the onset of menstruation, is a major milestone. Despite its natural occurrence, menstruation is often surrounded by stigma, misinformation, and inadequate support, particularly in low-resource settings. These challenges can negatively affect school attendance, mental health, and participation in extracurricular activities, including sports.

Participation in sports is linked to numerous benefits: improved self-esteem, academic success, physical health, and social skills. However, menstrual health issues often hinder girls from participating in sports due to fear of leakage, discomfort, pain, or embarrassment. A lack of accurate menstrual health information and inadequate facilities further exacerbate these challenges.

1.2 Problem Statement Despite the benefits of sports for adolescent girls, menstrual-related discomfort and stigma continue to reduce participation. Schools often lack structured menstrual health education, leaving girls unprepared to manage menstruation effectively. Research rarely examines how MHE impacts girls' sports engagement and performance.

1.3 Significance of the Study This study addresses a critical gap by examining how MHE influences girls' attitudes, behaviours, and performance in school sports. Findings can inform school health policies, improve gender-sensitive education, and reduce stigma. It also promotes broader conversations about gender equity and adolescent well-being.

1.4 Objectives

- Assess girls' knowledge of menstrual health and its impact on sports participation.
- Evaluate absenteeism and performance during menstruation.
- Determine MHE's effectiveness in improving confidence and engagement.
- Explore perceptions among students, educators, and coaches.

1.5 Research Questions

1. What is the current level of menstrual health knowledge among adolescent girls?
2. How does menstruation impact sports participation and performance?
3. How can MHE mitigate menstruation-related barriers to sports?
4. What are stakeholder perceptions of menstruation and girls' sports involvement?

1.6 Scope and Limitations

The study focuses on secondary school girls (ages 12–18) in both rural and urban settings. Limitations include cultural sensitivities, potential response bias, and infrastructural variability.

2. Methodology

2.1 Research Design A mixed-methods approach was employed. Quantitative data assessed pre- and post-intervention changes. Qualitative data provided contextual depth.

2.2 Population and Sampling

- Target Group: Girls aged 12–18 in six secondary schools.
- Sampling: Stratified random sampling for quantitative surveys (n=250). Purposive sampling for focus groups and interviews.

2.3 Data Collection Tools

- Structured questionnaires (pre/post MHE).
- Focus group discussion guides.
- Semi-structured interview protocols.

2.4 Data Analysis

- Quantitative data analysed using SPSS (v26.0); paired t-tests and chi-square tests applied.
- Qualitative data coded thematically using NVivo.

2.5 Validity and Reliability

- Pilot testing ensured clarity.
- Triangulation of data sources improved credibility.
- Standardized tools and cross-validation enhanced reliability.

2.6 Ethical Considerations

- Institutional ethics approval was obtained.
- Informed consent from participants and guardians.
- Confidentiality and anonymity ensured.

3. Results

3.1 Demographics

- Mean age: 15.2 years.
- School type: 58% public, 42% private.
- Location: 60% urban, 40% rural.

3.2 Menstrual Health Knowledge

- 72% understood the menstrual cycle.
- 65% practiced basic hygiene.
- 41% held at least one myth.

3.3 Sports Participation Before vs. After MHE

Metric	Before MHE	After MHE
Regular participation	32%	67%
Absenteeism	61%	28%
Confidence	35%	71%

3.4 Performance Indicators (Mean Scores)

Indicator	Before	After
Physical comfort	2.4	4.0
Emotional readiness	2.7	4.2
Peer support	3.0	4.3

3.5 Statistical Significance

- T-tests showed $p < 0.01$ improvement.
- Chi-square: $\chi^2 = 18.6$, $p < 0.001$ (correlation between knowledge and participation).

4. Discussion

MHE effectively increased sports participation, improved comfort and confidence, and addressed key misconceptions. Qualitative responses highlighted reduced stigma and more supportive peer and teacher environments. Persistent issues include inadequate school infrastructure and lingering cultural taboos.

5. Conclusion

MHE is a powerful tool for empowering girls to engage in school sports, improving their well-being, and promoting gender equity. When combined with infrastructure improvements and educator training, MHE can transform school environments.

6. Recommendations

1. Integrate MHE into school curricula for all genders.
2. Upgrade facilities: Clean toilets, rest areas, and disposal units.
3. Distribute products: Free/reduced-cost pads.
4. Train educators: Gender-sensitive instruction and mentorship.
5. Promote peer support: Clubs and anti-stigma campaigns.
6. Monitor outcomes: Track attendance and sports involvement.

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