Health impact: The impact of MHM on reproductive tract infections

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MHM: Background & Definition

- Globally, 52% of the female population (26% of the total population) is of reproductive age and most of these menstruate each month between 2-7 days.
- Menstruation is a natural process, but in developing countries it is still a neglected issue.

Menstrual Hygiene Management

"Using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials" (Sommer and Sahin, 2013)

MHM: Challenges in developing countries

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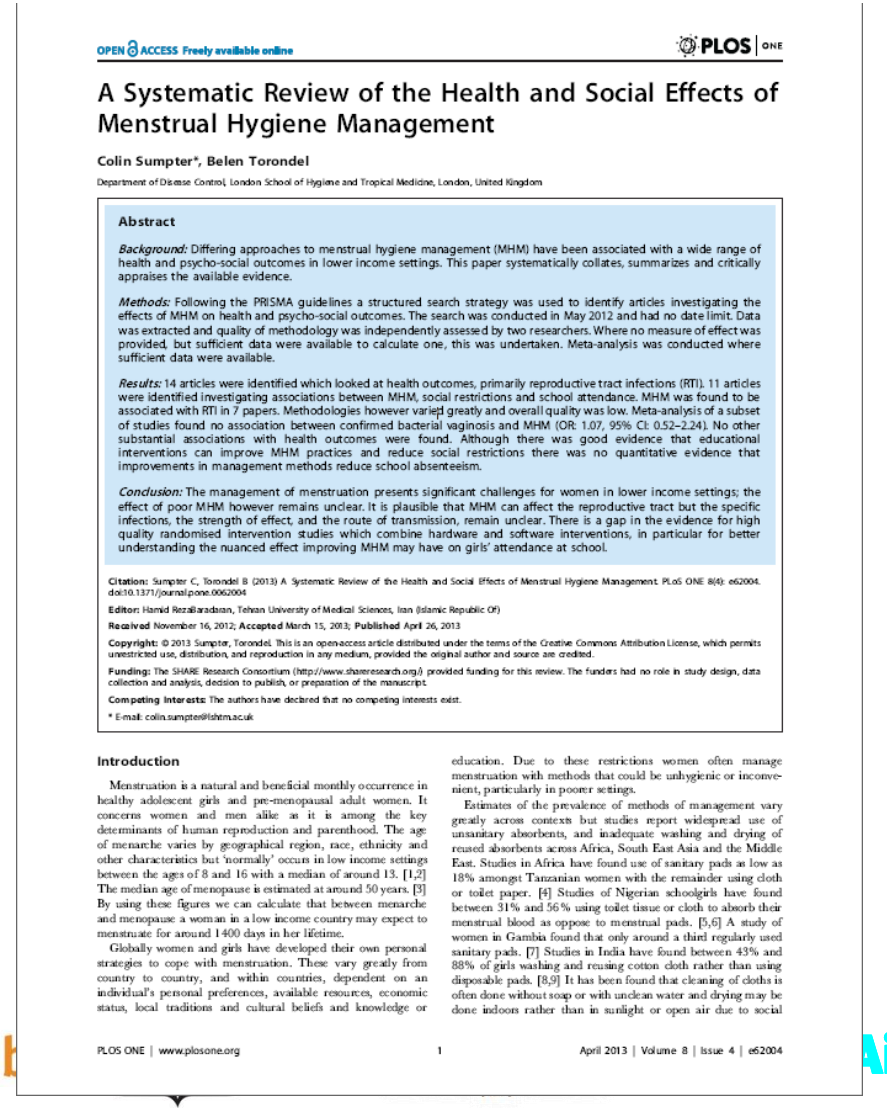
Systematic Review of the Health and Social Effects of Menstrual Hygiene Management



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PLOS ONE

A Systematic Review of the Health and Social Effects of Menstrual Hygiene Management

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Abstract

Background: Differing approaches to menstrual hygiene management (MHM) have been associated with a wide range of health and psycho-social outcomes in lower income settings. This paper systematically collates, summarizes and critically appraises the available evidence.

Methods: Following the PRISMA guidelines a structured search strategy was used to identify articles investigating the effects of MHM on health and psycho-social outcomes. The search was conducted in May 2012 and had no date limit. Data was extracted and quality of methodology was independently assessed by two researchers. Where no measure of effect was provided, but sufficient data were available to calculate one, this was undertaken. Meta-analysis was conducted where sufficient data were available.

Results: 14 articles were identified which looked at health outcomes, primarily reproductive tract infections (RTI). 11 articles were identified investigating associations between MHM, social restrictions and school attendance. MHM was found to be associated with RTI in 7 papers. Methodologies however varied greatly and overall quality was low. Meta-analysis of a subset of studies found no association between confirmed bacterial vaginosis and MHM (OR: 1.07, 95% CI: 0.52–2.24). No other substantial associations with health outcomes were found. Although there was good evidence that educational interventions can improve MHM practices and reduce social restrictions there was no quantitative evidence that improvements in management methods reduce school absenteeism.

Conclusion: The management of menstruation presents significant challenges for women in lower income settings; the effect of poor MHM however remains unclear. It is plausible that MHM can affect the reproductive tract but the specific infections, the strength of effect, and the route of transmission, remain unclear. There is a gap in the evidence for high quality randomised intervention studies which combine hardware and software interventions, in particular for better understanding the nuanced effect improving MHM may have on girls' attendance at school.

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Introduction

Menstruation is a natural and beneficial monthly occurrence in healthy adolescent girls and pre-menopausal adult women. It concerns women and men alike as it is among the key determinants of human reproduction and parenthood. The age of menarche varies by geographical region, race, ethnicity and other characteristics but 'normally' occurs in low income settings between the ages of 8 and 16 with a median of around 13. [1,2] The median age of menopause is estimated at around 50 years. [3] By using these figures we can calculate that between menarche and menopause a woman in a low income country may expect to menstruate for around 1400 days in her lifetime.

Globally women and girls have developed their own personal strategies to cope with menstruation. These vary greatly from country to country, and within countries, dependent on an individual's personal preferences, available resources, economic status, local traditions and cultural beliefs and knowledge or education. Due to these restrictions women often manage menstruation with methods that could be unhygienic or inconvenient, particularly in poorer settings.

Estimates of the prevalence of methods of management vary greatly across contexts but studies report widespread use of unsanitary absorbents, and inadequate washing and drying of reused absorbents across Africa, South East Asia and the Middle East. Studies in Africa have found use of sanitary pads as low as 18% amongst Tanzanian women with the remainder using cloth or toilet paper. [4] Studies of Nigerian schoolgirls have found between 31% and 56% using toilet tissue or cloth to absorb their menstrual blood as oppose to menstrual pads. [5,6] A study of women in Gambia found that only around a third regularly used sanitary pads. [7] Studies in India have found between 43% and 88% of girls washing and reusing cotton cloth rather than using disposable pads. [8,9] It has been found that cleaning of cloths is often done without soap or with unclean water and drying may be done indoors rather than in sunlight or open air due to social

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Background:

1) Systematic Review (Sumpter and Torondel 2013):
Evidence for the impact of menstrual hygiene management (MHM) on Health outcomes (13 articles):
-Plausible association: good MHM and reduction of RTI.
Unclear about:

- -Specific infections
- -Strength of effect
- -Route of transmission
- -Definition of “good menstrual hygiene management”

Health impact

Psychosocial stress:

-Sanitation behaviours and stressors across the life course for women living in rural and urban areas, including MHM (Sahoo et al., 2015)

-MHM as a high stress activity for women in India, in particular it was likely to be ranked as most stressful among women (newly married) in rural and traditional tribal areas (Hulland et al., 2015).

Case control study in Odisha

- ~60% of women diagnosed with BV and UTI use reusable pads.
- Women who used **reusable absorbent pads were more likely to have symptoms of urogenital infection** (AdjOR=2.3,95%CI1.5-3.4) or **to be diagnosed with at least one urogenital infection** (BV or UTI) (AdjOR=2.8,95%CI1.7-4.5), than women using disposable pads.

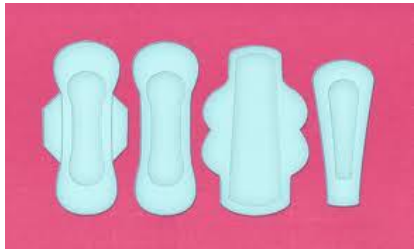
Research Aim:

Menstrual hygiene Management (absorbent type, WASH conditions)

Health outcomes:
- **Bacterial Vaginosis**
- **Candida**
- **Trichomonas vaginalis**

1) Are menstrual hygiene management practices (including type of absorbent used, pad hygiene practices and women WASH practices) risk factors for lower reproductive tract infections?

Figure 9



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Sanitation and Hygiene Applied Research for Equity

Study design: Cross-sectional hospital based study

-**Number of women**: 558
-**Location**: 2 hospitals (Bhubaneswar and Rourkela) Odisha
-**Time:** April 2015- Feb 2016
-**Inclusion criteria**: -Women attending to gynaecology or family planning clinic
-18-45 years old
-Non-Pregnant
-Non menstruating during clinic visit
-**Exclusion criteria:** -Had a hysterectomy
-Taken antibiotics in the previous 3 weeks
-Used oral contraceptive pills in previous 3 months
-Diabetes mellitus,
-HIV positive

Study design: Risk factor assessment

Questionnaire (administered by a nurse: collected in private room) questions related to:

-**Absorbent use** and practices of cleaning, drying and storage of the pad.
-**Body hygiene questions:** women hygiene practices related to body hygiene during menstruation.
-**WASH home related questions:** water, hygiene and sanitation access information at household level.
-Socioeconomic data and demographic information: age, education level, socioeconomic indicators

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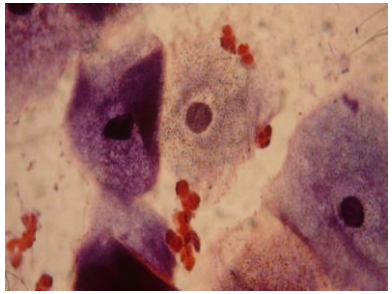
Study design: Outcome assessment

Laboratory diagnostic:

- Bacterial Vaginosis (BV): Nugent score
- Candida infection : Rapid diagnostic test
- Trichomonas vaginalis: PCR



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Results

62% were diagnosed with at least 1 of the 3 infections:

-Bacteria vaginosis (41%)
-Candida infection (34%)
-Trichomonas vaginalis (5.5%)

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Results

Associations of different hygienic practices and household enabling environment factors and risk of **BV:**

Exposure factors (Univariate analysis)	PRR (CI)
Reusable cloth vs. disposable pads	**1.28 (1.1-1.6)**
Changing absorbent outside latrine vs. in latrine	**1.26 (1.03-1.53)**
Washing less frequent during menstruation vs more frequent	**1.22 (1.0-1.5)**

Adjusted for all factors

Changing absorbent outside the latrine and **washing less frequently during menstruation** increase risk of **BV**

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Results

Associations of different hygienic practices and household enabling environment factors and risk of **Candida:**

Exposure factors (Univariate analysis)	PRR (CI)
Reusable cloth vs. disposable pads	**1.67(1.3-2.1)**
Washing less frequent during menstruation vs more frequent	**1.34(1.07-1.7)**

Adjusted for all factors

Using reusable cloth and **washing less frequently during menstruation** increase risk of **Candida**

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Results

Associations of different hygienic practices and household enabling environment factors and risk of **being infected with at least 1:**

Exposure factors (Univariate analysis)	PRR (CI)
Reusable cloth vs. disposable pads	**1.38(1.2-1.6)**
Changing absorbent outside latrine vs. in latrine	**1.24(1.19-1.4)**
Washing less frequent during menstruation vs more frequent	**1.18(1.06-1.4)**

Adjusted for all factors

Reusable cloth, Changing absorbent outside the latrine and **washing less frequently during menstruation** increase risk of **having at least one infection**

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Results

Reusable material practices:

Risk Factors	BV Unadjusted PRR (95% CI)	BV Adjusted PRR (95% CI)	Candidiasis Unadjusted PRR (95% CI)	Candidiasis Adjusted PRR (95% CI)	TV Unadjusted PRR (95% CI)	TV Adjusted PRR (95% CI)
Place to wash absorbent						
-Inside the toilet stall	1.0	1.0	1.0	1.0	1.0	1.0
-At the tube well or yard	1.04(0.81-1.34)	1.01 (0.76-1.34)	0.80 (0.61-1.07)	0.86 (0.64-1.16)	1.39 (0.58-3.33)	2.30 (0.80-6.56)
After washing, how did you dry the cloth						
-Dry it in the Sun/open space	1.0	1.0	**1.0**	**1.0**	1.0	1.0
-Dry it inside the house	1.15(0.89-1.48)	1.07(0.82-1.39)	**1.89(1.41-2.55)**	**1.78(1.34-2.38)**	2.13(0.83-5.47)	1.91(0.68-5.32)
How do you store the cloth for use next time						
-Wrapped in polythene	1.0	1.0	1.0	1.0	1.0	1.0
-Wrapped in another material	1.01(0.76-1.35)	1.04(0.76-1.42)	0.83(0.59-1.16)	0.86(0.62-1.20)	0.33(0.79-1.42)	0.28(0.07-1.10)
Where did you store the cloth for use next time						
-Within the cupboard in the changing room	1.0	1.0	**1.0**	**1.0**	1.0	1.0
-In the toilet	1.10(0.85-1.42)	1.11(0.85-1.43)	**1.98(1.50-2.61)**	**1.96(1.49-2.57)**	0.63(0.24-1.61)	0.54(0.21-1.38)

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Summary

-62% were diagnosed with at least one of the 3 infections (being BV the most prevalent)

-**Changing absorbent outside the latrine** and **washing less frequently during menstruation** increase risk of **BV**

-**Using reusable cloth** and **washing less frequently during menstruation** increase risk of **Candida**

-No associations with TV

-**Using reusable pads**, **changing absorbent outside the latrine** and **washing less frequently during menstruation** increases risk of having at least 1 infection (BV, Candida or TV)

-Women who **dried their reusable menstrual absorbent inside their house** and women who **kept the stored cloth hidden in the toilet** compartment were more likely to have Candida infections compared with women who dried them in the sun or open space or who kept stored within cupboard in the changing room.

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Break the taboo! Thank you

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