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It's a girl thing: Menstruation, school attendance, spatial mobility and wider gender inequalities in Kenya



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ABSTRACT

Recent attention has been drawn to possible linkages between poor sanitation in sub-Saharan African schools and low attendance rates amongst post-pubescent girls. In particular, questions have been raised about the influence of menstruation and access to sanitary products on schoolgirl absenteeism but research on this topic is scarce. Moreover, the few detailed empirical studies that have been conducted in sub-Saharan Africa on this topic have produced contradictory results. These uncertainties coupled with theories of how concepts of pollution and taboo are used to construct or police spatial boundaries (and maintain power relations within society) provide an interesting context for examining everyday geographies of menstruation. Kisumu, Kenya provides the context for the study which utilises a feminist political ecology framework to investigate cultural and spatial limitations associated with menstruation and puberty. Drawing on schoolgirls' lived experiences, we illustrate how emotional geographies of puberty and menstruation are productive of and help to reproduce gender inequalities in mobility and access to social capital resources (especially education). At the same time we show how poverty coupled with low levels of sexual and reproductive health and rights education can exacerbate gendered bodily inequalities as girls face an increased risk of sexual exploitation when they reach puberty.

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Introduction

In 2003, the UN Secretary General, Kofi Annan stated that 'there is no tool for development more effective than the education of girls. No other policy is as likely to raise economic productivity, lower infant and maternal mortality, improve nutrition and promote health' (cited in [UNICEF, 2008](#)). Other key benefits associated with girls' education include protection against early pregnancy and other sexual/reproductive harms including HIV/AIDS ([Mason et al., 2013](#)). Girls in sub-Saharan Africa (SSA) bear a disproportionately high burden of such harms (ibid) and although girls' school enrolment ratios in the region have increased in recent years ([World Bank, 2011](#)), large inequality gaps in primary education remain ([UN, 2012](#)). Gender gaps are even more pronounced in secondary education ([Mensch and Lloyd, 1998](#); [Mutunga and Stewart, 2003](#); [Muito, 2004](#); [Kirk and Sommer, 2006](#); [Sommer, 2010a](#); [Malusu and Zani, 2014](#)).

To explain these gaps, attention has been drawn to possible linkages between poor school-based sanitation and girls' low attendance rates. At the same time, the interdependence of the gender, education and sanitation Millennium Development Goals ([Ten, 2007](#)) has received increased interest from donors and NGOs. According to Barbara Frost (cited in [Melik, 2011](#)) without sanitation, 'you cannot achieve universal primary education, you cannot promote gender equality and empower women, you cannot reduce child mortality.'

While macro-level data are available on sanitation access and gendered school attendance, the everyday 'lived experiences' of schoolgirls with poor sanitation access are poorly understood ([Sommer, 2010a](#)). Reflecting the difficulties of obtaining information on such sensitive issues ([McFarlane et al., 2013](#)), academic research on the influence of puberty (and the risk of sexual harassment that can accompany this) and menstruation on girls' school attendance has been quite scarce ([McMahon et al., 2011](#)). Nevertheless, interest in menstruation and poor sanitary product access as possible causes of schoolgirl absenteeism has attracted attention from the media, NGOs and policy-makers following efforts to track progress towards the Millennium Development Goals ([Bharadwaj and Patkar, 2004](#); [DfID, 2005](#); [Kirk and Sommer, 2005, 2006](#); [Ten, 2007](#); [UNICEF, 2008](#); [World Bank, 2005](#); [Oster and Thornton, 2009, 2011](#); [Grant et al., 2010](#); [Fehr, 2010](#)). In response, several state and

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NGO interventions have sought to increase schoolgirls' access to sanitary products (Kirumira, 2003; Cooke, 2006; Ahmed and Yesmin, 2008; Callister, 2008; Scott et al., 2009; Njuguna et al., 2009). In Kenya, the Prime Minister allocated Sh2.6 billion for sanitary towels in 2012 as part of the Primary Schools Sanitary Towels Programme² (Capital, 2012) and several NGOs and charities have developed re-usable sanitary towels (The Village Trust, 2010; Team Kenya, 2010; Access-health Project Mwezi, 2014; K-MET, 2014; Kiwanis, 2014).

Interestingly, academic studies on the impacts of improved sanitary towel access (or menstruation more generally) on girls' school attendance have produced rather contradictory results whilst highlighting other important influences on attendance (Kirk and Sommer, 2006; Scott et al., 2009; Grant et al., 2010; Sommer, 2010a; McMahon et al., 2011; Muvea, 2011; Oster and Thornton, 2011). In SSA, poverty and embedded gender inequalities are key causes of pubescent girls 'dropping out' of school or even engaging in 'transactional sex' to obtain money to buy sanitary towels so that they can continue to attend (Kirk and Sommer, 2005, 2006; Mason et al., 2013; Malusu and Zani, 2014). Sommer (2010a, 523) argues that as girls mature, a 'collision' occurs 'in school environments that continue to be gender discriminatory' resulting in 'an unnecessary, and preventable, interruption to girls' active school participation and attendance'. To address this, the benefits of multi-sectoral initiatives that link sanitation with education on health, hygiene and girls' rights have been highlighted (Thomas, 2002; Kirk and Sommer, 2005; McMahon et al., 2011; Malusu, 2012; Mason et al., 2013). In taking such approaches forward, Sommer (2010a) emphasises the importance of 'capturing girl's lived perspectives on contextual factors impacting on their lives in a modernizing society' (ibid, 527).

Using empirical data from Kisumu Kenya, this paper investigates such 'lived perspectives' in the context of how everyday geographies of menstruation and puberty reflect and re-produce inequalities in gendered school attendance and broader life chances. Rocheleau et al.'s (1996) 'open ended' approach (Elmhirst, 2011) to feminist political ecology (FPE) that treats gender as 'a critical variable in shaping resource access and control' (Rocheleau et al., 1996, 4) provides inspiration for our use of an FPE framework to examine gendered inequalities in access to social (as opposed to natural) capital resources, especially education.

Another important influence is the broader body of FPE-informed research published in *Geoforum* including Nightingale's (2011, 156) analysis of how Hindu ideas of ritual purity (and pollution) lie behind gendered spatial restrictions in Nepal and are maintained through 'everyday spatial and bodily practices' which reinforce existing power relations. Drawing on Truelove's FPE-informed analysis of the implications of inequalities in water and sanitation access for everyday lives and rights in low income areas of New Delhi, we highlight everyday 'inequalities forged on the body' (Truelove, 2011, 145) within particular spaces (schools). We also utilise Sultana's (2011) work on gendered suffering over access to uncontaminated water in Bangladesh which shows how resource struggles are not just material but 'are mediated through bodies, spaces and emotions' (163). In particular, we illustrate how 'emotional geographies' of puberty and menstruation reinforce gendered spatial relations and access to social capital resources in Kisumu, especially where girls lack access to reliable and hygienic sanitation and sanitary products. Our contribution to FPE scholarship is the analysis of local-scale empirical data on everyday geographies of menstruation/puberty to improve understandings of their influence on gendered power relations (Rocheleau, 2008)

whilst highlighting opportunities for further work on this topic. The research is important and timely as the everyday influence of menstruation and puberty on gendered mobility and wider socio-economic opportunities is understudied yet crucial for informing for sanitation, education and health policy and practice (Ten, 2007; McFarlane et al., 2013).

To provide context for the study, the following sub-section draws together work on gender/sanitation/education interlinkages and toilets as gendered spaces. Concepts of taboo/pollution/dirt surrounding menstruation and FPE-informed analyses of menstruation/puberty-related gender inequalities are then discussed along with their impacts on spatial and socio-economic mobility in SSA. This is followed by an overview of the methodological approaches used in the research. There are four main empirical sections in the paper. The first focuses on why girls sometimes miss school and the role menstruation plays in this while the second investigates how menstruation influences girls' mobility and broader access to social capital resources. The third empirical section discusses the everyday sexual exploitation of post-pubescent girls. Although this was not an issue that we set out to investigate, it came to light during fieldwork as an illustration of how poverty, gender inequality/discrimination, a lack of Sexual and Reproductive Health and Rights (SRHR) knowledge/education and cultural tolerance of gendered violence can 'collide' as girls mature. The last empirical section investigates the responses of schoolgirls and teachers to schemes promoting re-usable sanitary products.

Gender, sanitation and education interlinkages

Emphasising linkages between girls' absence from school and poor sanitation provision, several studies in SSA have highlighted important everyday challenges associated with managing menstruation in school environments. Sommer's research in Tanzania (2010a) emphasises difficulties created by a lack of access to private toilets with water supplies,³ sanitary products, painkillers for menstrual cramps, and spare clothes if leaks occur. Long school days (typically 8 h in Kenya) that increase the risk of menstrual leaks coupled with frequent harassment by boys in and around school toilet areas add to the shame and embarrassment experienced by many post-pubescent girls. Where it is difficult to change sanitary products, infection (and the odour of menstrual blood being detected by others) are likely to be higher and girls may suffer discomfort and stigmatization as a result (Muito, 2004). Given such constraints, it is unsurprising that many Kenyan girls view 'menstruation as the most significant social stressor and barrier to schooling' (McMahon et al., 2011, 2) and prefer to manage their menses at home.

In SSA more generally, these practical difficulties are often exacerbated by low levels of knowledge about both the biological process of menstruation and SRHR, compared to knowledge about the taboos (or etiquette – Laws, 1990) surrounding menstruation (Pattman and Chege, 2003; Kirk and Sommer, 2006; Allotey et al., 2011). The pan-African NGO FAWA (Foundation for African Women Educationalists) found that a 'culture of silence' surrounding menstruation in rural Uganda resulted in it being 'ignored in families, schools and communities' (FAWE-U, 2003 cited in Kirk and Sommer, 2006, 2). In Kenya girls often struggle to obtain information on menstruation and puberty due to a lack of supportive school staff or even family members to discuss these issues with (Muito, 2004; McMahon et al., 2011; Mason et al., 2013). Many girls also experience considerable pressure from family members to leave school so that they can take on a larger share of household work and ultimately get married – issues that reflect broader risks

² Funding for this program was cut by over \$1 million in the 2013–14 budget (Malusu and Zani, 2014).

³ Although it should be emphasized that many girls may not have access to such facilities in their homes either.

of sexual abuse/harassment (from fellow students/teachers) and pregnancy (ibid.).

Consequently, ‘providing the physical or material means for “menstrual management” does not necessarily empower girls who lack information about their own bodies’ (Kirk and Sommer, 2006, 11) or enable them to resist unwanted sexual advances. In response, there has been growing emphasis on the need to combine access to sanitary products with multi-sectoral sanitation, menstrual hygiene management (MHM) and SRHR programs (Thomas, 2002; Bharadwaj and Patkar, 2004; Kirk and Sommer, 2006; Ten, 2007; McMahan et al., 2011; Mason et al., 2013).

With regard to the impacts of sanitary product access on school attendance, Scott et al. (2009) found that the provision of sanitary towels coupled with menstrual hygiene education in Ghana reduced girls’ absence from school by more than half. By contrast, other studies found ‘only tentative data on the impact of interventions related to improved school sanitation and increased menstrual awareness on the lives and experiences of female students’ (Kirk and Sommer, 2006, 11). Research in Malawi by Grant et al. (2010, 2) found no statistically significant difference in male and female absenteeism and no relationship between toilet availability and girls’ school attendance. Instead, they found that ‘sickness’ accounted for a far higher percentage of school absence (33%) than menstruation (2.4%) while 21% of respondents missed school to help at home. Consequently, they argue that while ‘menstruation may negatively impact girls’ quality of life in particular cultural and physical environments, it is unclear whether or not girls’ schooling outcomes can be attributed directly or indirectly to the inconveniences and discomforts of menstruation.’⁴

Mason et al. (2013) question the likely success of menstrual solutions to school absenteeism, emphasising ‘reproductive and sexual health threats’ such as pregnancy and HIV as important causes of girls leaving school in SSA. It is not unusual for there to be a high proportion of adolescent children in the lower primary grades and unsatisfactory school environments (where students get caned for small offences or poor academic performance) can make marriage/motherhood more attractive options for older girls, encouraging them to leave school (Mensch and Lloyd, 1998; Mensch et al., 2001). This is particularly common amongst girls who started school late or are behind their age grade due to poor academic performance or parental inability/unwillingness to pay school fees (Lloyd and Mensch, 2006; Mensch and Lloyd, 1998). Given the wide range of factors underlying girls’ absences from or decisions to leave school, the need for more evidence-based research on sanitation/education/menstruation interlinkages in different locations has received significant recent attention (Kirk and Sommer, 2006; Grant et al., 2010; Sommer, 2010a; McMahan et al., 2011; Oster and Thornton, 2011; Mason et al., 2013).

Menstruation taboos, pollution and the spatiality of dirt

The cultural sensitivity and taboos/etiquette surrounding menstruation (Houppert, 2000; Laws, 1990) coupled with the ‘great distaste’ (Black and Fawcett, 2008) associated with sanitation more generally have long resulted in the neglect of such issues within development initiatives and wider academic research (George, 2008; Jewitt, 2011). An important exception is the growing field of research on toilets as gendered spaces that recognises gender inequalities in toilet provision and the export of patriarchal toilet

standards, designs and priorities from global North to South (Anthony and Dufresne, 2007; Banks, 1990; Cavanagh and Ware, 1991; Cooper et al., 2000; Cowen et al., 2005; Daley, 2000; Edwards and McKie, 1997; Gershenson and Penner, 2009; Greed, 2003, 2014; Penner, 2005). Despite such developments, menstruation remains marginalized within largely male-dominated sanitation agendas that tend to prioritise technical (hardware) over socio-cultural (software) considerations (Greed, 2003, 2014). Nevertheless, the lack of academic curiosity regarding possible interconnections between inadequate sanitation, MHM, school attendance and broader life chances seems surprising given recent emphasis on gender and everyday geographies (Dyck, 2005; Holloway and Hubbard, 2001) and their importance ‘in the production of social inequalities’ (Nightingale, 2011, 153).

An important framework for examining the taboos/etiquette surrounding menstruation can be found in Douglas’s (1966) work on dirt as ‘matter out of place’ and the use of concepts of pollution and taboo to construct or police (real and symbolic) spatial boundaries. Drawing on this work, Laws (1990, 36) suggests that pollution beliefs can ‘be read as statements about power relations in society’ as they ‘define, according to the dominant ideology, what is “matter out of place” and this in turn makes it clear who has control of such social definitions.’ Consequently she argues that ‘the treatment of menstrual blood as dirty represents a judgement on the “place” of menstruating women’ (32). These ideas are developed by O’Connell Davidson (1998), Longhurst (2001) and Wolkowitz (2007, 24) who relate dirtiness and bodily leakiness ‘to issues of dignity and power, rather than purity and contamination.’ In a similar vein, Cresswell (1997, 340) analyses how media references to used sanitary products ‘decorating’ perimeter fences during the 1980s Greenham Common protests were used ‘as a metaphor for a general notion of the women as “out-of-place” and of transgression more generally.

Menstruation, spatial mobility and wider gender inequalities

This example of menstruation (or menstrual products more specifically) acting as a spatial barrier and a marker of (or challenge to) wider gender inequalities has interesting parallels in SSA. In addition to spatial variations in sanitation/menstruation/education linkages, the extent to which girls’ everyday mobility and access to particular spaces are influenced by menstruation is a rich area of investigation that has received little attention from geographers. Yet FPE approaches lend themselves well to investigating micro-scale ‘constructions of social difference and micropolitics within the scale and spaces of the everyday’ (Truelove, 2011, 145) that can highlight how gender differences at puberty are experienced and reproduced by different cultural and socio-economic groups.

In material terms, controlling the visible leakage of menstrual fluid presents numerous practical and psychological challenges that affect the spatial mobility and wider equality of women that lack access to modern sanitary products. In more symbolic terms, there are many examples of puberty – and menstruation especially, as it marks a transition into adulthood – being accompanied by restrictions on female mobility and access to particular spaces in ways that are both productive of and reproduce wider gender inequalities (Laws, 1990; Fenster, 1999; Nightingale, 2011). In Kenya, interactions between adolescent girls and boys were traditionally supervised within the community but increased education access has removed such controls, often exacerbating girls’ sexual harassment (Mensch et al., 2001). Mensch and Lloyd (1998) make an interesting contrast between the positive role Kenyan schools play in helping to delay marriage and childbearing, and the unsafe spaces that they create for post-pubescent girls who frequently report non-consensual sexual activity (including rape) from

⁴ Likewise, research in Nepal by Oster and Thornton (2009, 2011) which involved providing girls with menstrual cups failed to reduce school absenteeism; in part because the cups did not prevent menstrual cramps which caused more absence than a lack of access to sanitary products.

teachers and fellow students. Where schools are distant from girls' homes, journeys there and back become particularly risky.

Even within the home, perceptions of safe spaces change when girls undergo puberty. Mason et al. (2013) describe how post-pubertal girls' access to male relatives, including their own fathers, is restricted to reduce the risk of rape or sexual abuse. These restrictions echo traditional Kenyan constraints on girls entering their parents' bedrooms (often being sent to live with their grandmothers) after they reach menarche (McMahon et al., 2011). At the same time they hint at deeply entrenched gender inequalities that consider everyday violence against girls and women as part of the social norm.

Echoing symbolic associations of menstruation with concepts of pollution, other constraints on Kenyan women's mobility include restrictions on ritually significant domestic activities such as washing household water containers (McMahon et al., 2011). According to Malusu and Zani (2014), additional cultural taboos discourage menstruating women and girls from undertaking certain religious activities or even undertaking paid work. Although some of these restrictions relieve menstruating women from their everyday drudgery (Buckley and Gottlieb, 1988; Laws, 1990), they may simultaneously reproduce wider gender inequalities by restricting girls' school attendance, income-earning potential and broader life chances.

Other constraints on female mobility may be more practical than symbolic, although the broader material outcomes may be similar. In Kenya, practical and emotional constraints (including poor sanitary product access, fear of the shame that soiled clothing would elicit and concerns of sexual abuse when travelling) can account for significant self-restrictions on spatial movements.

In such situations, initiatives promoting increased sanitary product access may address strongly felt needs but may struggle to change the everyday nature (and cultural acceptance of) gendered violence and sexual abuse without addressing more fundamental challenges to entrenched gender inequalities. But the spatially-specific nature of these inequalities requires geographically specific (and culturally sensitive) interventions that are hard to implement given the shortage of detailed empirical research (McMahon et al., 2011). This paper attempts to address some of these gaps by investigating how everyday geographies of menstruation and puberty help to reproduce gender inequality in Kisumu through their influence on girls' school attendance, spatial mobility and longer-term life chances. The effectiveness of schemes providing different sanitary products is also explored.

Methodology

Field research took place in and around Kisumu (see Fig. 1), Kenya's third largest city with a population of around 500,000. A primarily qualitative approach was undertaken as the research sought to elicit the feelings and opinions of schoolgirls and encourage them to share their lived experiences and aspirations. Seventeen semi-structured interviews were conducted along with seven focus groups (FGs) involving 53 participants. Nine schools were visited and in an effort to obtain data from different socio-economic and age groups, one private (fee-paying) primary school and one secondary school were included in the sample (see Table 1). With a view to contrasting rural/urban toilet availability/quality and investigating the influence of this on girls' school attendance, we selected four schools in Kisumu and five in surrounding rural areas. On visiting the schools, however, we found few differences in their toilet facilities although the longer school journey times in rural areas (1–2 h compared to 5–45 min for the Kisumu schools) were mentioned by several respondents.



Fig. 1. Location of the study area.

Several participatory research tools were utilized to develop rapport with schoolgirls. Ranking exercises were undertaken during FGs to investigate why girls missed school while participatory maps and 'ideal toilet' drawings provided a medium for later discussions of sanitation-related issues. In addition to the school-based research, participant and direct observation was undertaken with three organisations that made reusable sanitary towels in the Kisumu area. All respondents' names are anonymised.

Gendered inequalities in girls' school attendance in Kisumu

Most Kenyan primary schools are co-educational and children can be enrolled in primary school from age 6. Provided children start school on time and progress annually to the next class, they take examinations for the Kenyan Certificate of Primary Education (KCPE) in year 8 at the age of 13–14 and, if successful, are eligible to attend a further four years of secondary school. Following the introduction of free primary education in 2003, many older children – particularly girls – returned to school and it is not uncommon for children in their late-teens to still attend primary school (McMahon et al., 2011).

In Kisumu and Kenya more generally, female education levels have improved (World Bank, 2011), but progress remains slow and has been attributed, in part, to the difficulties of managing menstruation in school (Scott et al., 2009; McMahon et al., 2011; Muvea, 2011; Mason et al., 2013; Malusu and Zani, 2014). According to the African NGO Zanaa:

'Kenyan adolescent girls miss approximately 3.5 million learning days per month due to lack of funds to purchase sanitary pads. This impedes their ability to compete in the classroom, leads to low self-esteem, higher drop-out rates and, in many areas of Kenya, makes them vulnerable to early marriage'.

[(2012, 1)]

Discussions with adolescent girls and school teachers at School B (the only fee-paying private primary school in our sample) as well as in the state-funded schools confirmed many aspects of this

Table 1
Key interview and focus group participants (all names anonymised).

Name	Age	School/organisation	Role
Constance	Adult	State Primary School A	Teacher
Felicity	Adult	Private Primary School B	Headteacher
Antony	Adult	State Primary School C	Headteacher
Victor	adult	State Primary School D	Headteacher
Felicity	Adult	State Primary School E	Primary Committee Member
Gloria	Adult	State Primary School F	Teacher
Aisha	Adult	State Primary School C	Teacher
Afiya	Teen	State Primary School G	Pupil
Stephanie	14	State Primary School H	Pupil
Margaret	15	State Secondary School I	Pupil
Zenah	13	State Primary School H	Pupil
Winnie	14	State Primary School C	Pupil
Everlyn	13	State Primary School F	Pupil
Rachael	Adult	'Sianda Women's group'	Trainee of Project Mwezi
Fatuma	Adult	K-Met Kisumu	Head of SoC
Miriam	Adult	Kakamega Mwezi towel training workshop	Project Co-ordinator. Also ex-teacher
Esther	Teen	Kakamega Mwezi towel training workshop	Participant
Mercie	Adult	Community Aid Development Fund (CADIF)	Commercial sex-worker
Angela	Adult	CADIF	Commercial sex-worker
Janet	20	Widows/orphans FG	Villager/ex-schoolgirl
Valentine	25	Widows/orphans FG	Villager/ex-schoolgirl
Focus groups details			
Number	Location		Participants
FG1	Village-based widows/orphans group 1		7 (ages 13–22)
FG2	Village-based widows/orphans group 2		6 (ages 13–25)
FG3	School C		8 (ages 13–15)
FG4	School D		13 (ages 13–17)
FG5	School G		7 (ages 14–16)
FG6	School F		7 (ages 13–14)
FG7	School B		6 (ages 13–15)

quote and identified ways in which menstruation (and associated cramps, embarrassment, taboos/etiquette and practical difficulties) influence school attendance and performance. According to Zenah, 'The boys get the best grades' while Constance, a teacher at State Primary School A elaborated:

'Girls appear to do better pre- and post-pubescent, grades being only worse than boys around the menarche. Girls perform so well when they are in the lower primary, but when they reach class 5/6, they drop...you now find boys performing much better than girls.'

To investigate how menstruation affects school attendance amongst better-off girls, participatory ranking exercises were conducted in School B. When asked why girls miss school, participants listed, in descending order, an inability to pay school fees followed by sickness, household chores, a lack of sanitary towels, embarrassment and shyness. Although girls listed poor sanitary towel access as the fourth most common reason for missing school, positive responses to questions about menstruation limiting girls' activities were low (under 10%) compared to the state schools where they were close to 100%. Further probing indicated that most girls in FG7 felt able to discuss menstruation with their mothers or teachers and so felt better supported in dealing with it. Access to sanitary towels was also quite good in the school although some of the less well-off pupils sometimes struggled with this. Felicity, the Headteacher commented: 'They pay fee yes, but you see sometimes a child at this school will still use a tissue...some of them come from poor families, but their parents are straining to give them a good education'.

By contrast, discussions at most of the other (state) schools indicated that poverty-related issues were important underlying causes of poor attendance due to an inability/unwillingness by parents to release girls from household chores or access sanitary products

for them. According to Antony, Headteacher of School C, many girls 'come from backgrounds where people didn't go to school, so they don't know the importance of coming. . .Others...lack. . .necessary things like food – their parents will go and tell them to look for money' instead of attending school. Constance added: 'Girls have a lot to do at home...when their parents are sick it is their job to take care of them...when they are going away it is them that will be left behind to take care of their siblings'.

Poverty also underpins many girls' lack of access to disposable sanitary towels as these cost 65–120 Kenyan Shillings (\$0.79–\$1.45) and are unaffordable to families earning the average Kenyan daily income of just over \$1/day. Victor, the headmaster of School D said: 'Around here there is poverty...if food cannot be got. . .sanitary towels are a luxury.' During FG discussions, most girls and all of the teachers explicitly linked school attendance to sanitary towel access. Felicity, a Primary Committee Member at School E said: 'When they have [sanitary towels] they come, when they don't. . .they feel shy, they miss school.' Likewise, ex-teacher Miriam, confirmed that often, when a girl is menstruating 'she cannot make it to school. Why? Because she cannot afford the sanitary pads. So she is staying at home.' The girls themselves confirmed these views with Winnie (13) speaking for several girls when she said: 'Sometimes I am not able to go to school when the pads are not there, so I have to stay at home until it stops'.

As Kirk and Sommer (2006) point out, even fabric rags suitable for home-made sanitary towels may be hard for very poor families to obtain. According to Fatuma from the Kenyan NGO K-MET (Kisumu Medical and Education Trust), in addition to alternatives like cotton wool or plastic bags, many girls use 'weird things' like 'mattresses. . .dried leaves. . .cow dung', while at school, they often 'pick up paper from the classroom' (Aisha, a teacher at School C). In addition to the risk of infection from dirty or damp materials, such alternatives cause physical discomfort and frequently leak. Winnie

recounted that: 'I use ragged cloths, and first time I experienced [menstruation] I used cotton wool...It is very difficult...sometimes...these things can leak!'

Is menstruation a reason for missing school?

Even at school B where sanitary towel access and parent/teacher support during menstruation is quite good, FG7 discussions revealed that three of the six issues identified as reasons for missing school (sickness, shyness and embarrassment) were closely linked to menstruation. These links were even more pronounced in most of the state school FGs.

Sickness

Although the term 'sickness' covered a wide range of ailments including malaria and gut infections, it soon became apparent in our FGs that many girls also used it as a euphemism for menstrual cramps and menstruation more generally. As other studies have pointed out (Oster and Thornton, 2009, 2011; Grant et al., 2010; Sommer, 2010a), dysmenorrhea can significantly reduce school attendance but the description of menstrual cramps as 'sickness' in Kisumu provides an interesting perspective on Oster and Thornton's conclusion (albeit based on work in Nepal) that menstruation caused less school absenteeism than 'sickness'. Two adult women participating in a village-based FG elaborated on linkages between dysmenorrhea and school absence. Janet said '...many girls would miss school when...they got serious cramps' while Valentine recalled how, when her periods started '...I never used to go to class for almost 3 days. I used to sit in the sick bay and sleep...I used to tell my teacher I am sick.'

Shyness/embarrassment

Field-based accounts of menstruation-related shyness/embarrassment obtained in FGs were reminiscent of other studies in SSA highlighting the practical and emotional difficulties that many girls face in managing their menses and hiding their menstruating status (Kirk and Sommer, 2005, 2006; Scott et al., 2009; Sommer, 2010a; McMahon et al., 2011; Muvea, 2011; Mason et al., 2013; Malusu and Zani, 2014). They also highlighted the importance of emotion as an influence on everyday geographies of menstruation and puberty, pinpointing, in the context of girls' access to education, the ways in which 'emotions are part and parcel of the complex way that people access and use a resource' (Sultana, 2011, 169). In many of the state schools visited, for example, the lack of privacy offered by toilets caused embarrassment for menstruating girls. Good hygiene was difficult as water taps (where present) were distant from the latrines, soap was rarely present and there were no facilities for disposing of used sanitary products.

Another cause of menstruation-related embarrassment/shyness was the fear of menstrual fluid leaking and visibly staining girls' clothes. Many girls have only one school uniform (often made of pale-coloured fabric) and lack underwear to keep sanitary towels in place, so they must wash and re-use their uniform if it becomes stained. According to Gloria, a teacher at School F, menstruating girls commonly 'spend most of the time outside 'cos...she is outside washing her uniform, instead of being in class.' Fears of being teased by male students or stigmatized (Laws, 1990) if their menstruating status is revealed are also common. Winnie recounted that when her clothes became stained: 'they [the boys] really laughed...it is not nice, you feel really ashamed.' Stephanie added 'They just like to laugh at us...I feel sad, and sometimes it can make you cry.'

A key factor contributing to embarrassment about menstruation in the study area seems to be role of wider cultural taboos/etiquette in inhibiting open discussion of the topic in many Kenyan

family settings (Mason et al., 2013). Such silences cause many girls to view menstruation (and puberty more generally) as something shameful. Crichton et al.'s (2012) study of mother-daughter communication regarding sexual maturation in Nairobi, for example, found many barriers including mothers knowing little about puberty and daughters feeling embarrassed to ask for information. A Kenyan national survey revealed that under 50% of parents discussed sex-related topics with their children (Eisenberg et al., 2006) reflecting a common perception that it is inappropriate for parents and children to discuss sexual maturation (Wamoyi et al., 2010). According to Malusu and Zani (2014), the tradition of young girls being educated about menstruation and sexual maturity by their grandmothers (rather than by their parents) in many parts of SSA has been eroded by the loss of many grandmothers to HIV/AIDS, leaving an important knowledge important gap that is only partially filled in school.

Reflecting Eisenberg et al.'s (2006) findings, only 4% of girls in our FGs reported learning about menstruation from their mothers while 14% received information from their sisters and 2% from their grandmothers. Mercie recounted that 'My mum...never had time for us...so we could only get our teaching at school.' The remaining 80% of girls in the FGs learned about menstruation from their teacher.

As Kenyan pupils are normally taught about menstruation during biology lessons in class 3 (Malusu and Zani, 2014), girls that start primary school late or repeat grades may be in their teens and already menstruating when they attend these lessons. Consequently, many girls have no idea what is happening when their periods actually start. State School F teacher Gloria explained: 'they...report to us that they have seen something that is very strange, they cry, but we always console them and tell them that it is normal.' She elaborated that most girls are 'not confident enough to discuss it with their parents...getting the sanitary towels is very difficult, so they are just keeping it for themselves using the local materials.' Esther reported that: 'I first started at school and ran to the toilet shaking with fear, I thought I needed to go to hospital! At hospital they taught me how to use sanitary towels and not to fear.' Likewise Margaret recounted that: 'My mum had not told me anything before it happened...I was very scared'.

Due to wider cultural taboos/etiquette regarding the discussion of menstruation and sexual maturity and a lack of training on how to tackle such issues in class, some male teachers are reluctant (or feel ill-equipped) to teach these topics and menstruation-related education is often more successful if female teachers are available. According to Antony: 'Among our culture, girls are not allowed to discuss with me, so they do not say anything'. He went on to say that his school:

'used to have a problem with the girls dropping out...they didn't know how to manage themselves during their menses, but now because the school has a high number of female teachers...we can see that the girls are improving...in the top most three classes girls are the best, they are now outperforming boys'.

Similar improvements were also seen at State Primary School A where there are 16 female teachers and girls' attendance equals that of boys in the most recent class figures. Constance explained that they 'take the girls somewhere to talk to them about their period and how to take care of themselves at that time.' Nevertheless, Victor, headmaster of State Primary D, argued that male teachers who are willing to discuss such topics can play an important role in helping girls to feel more comfortable about attending school when menstruating. Echoing Mason et al.'s (2013, 4) findings that girls taught about menstruation by male teachers reported 'no negative feedback', girls in FG4, which was attended by Victor, were clearly comfortable about discussing menstruation in his presence

and talked about his generosity in providing sanitary towels in school. Victor's friendly manner contributed greatly to the relaxed atmosphere of FG4, possibly reflecting his close links with the local rural community as well as his willingness to direct time, money and resources to help improve girls' performance and attendance at his school.

Menstruation and female mobility

Menstruation taboos/etiquette in the study area require women 'to be constantly aware of men' (Laws, 1990, 20) when managing their menses. Symbolic 'ideas of difference' (Nightingale, 2011) that limit the spaces occupied by 'polluted' menstruating women were apparent in Valentine's (FG1) description of the traditional Kenyan belief that if 'you go to church before you are through with menstruation. . .you are unclean.' At the same time, there are practical limitations – many self-imposed – on the activities undertaken by and spatial movements of menstruating women/girls. Most reflect the influence of emotion on everyday geographies of menstruation and are linked to a desire, amongst women/girls who lack access to sanitary products, to stay at home to minimise discomfort and the fear of embarrassment from menstrual leaks. According to Stephanie 'I miss...many days...I am just using cloths and leaves...I cannot do anything...'

Even if they go to school when menstruating, fears that their makeshift sanitary towels may leak can disrupt girls' concentration and participation in class as well as the micro-geographies of their movements. In many schools, pupils must stand when answering a question. This causes great embarrassment for menstruating girls as other pupils (especially boys) may laugh at their stained uniforms. Mercie recounted: 'There was a time when I messed up in class...I was like "how am I going to stand up?" So I just took my pullover and wrapped it round...I couldn't go to lunch . . .I just stayed in the classroom.' Likewise, Stephanie said: 'When I am at school, I just sit down. The teacher teaches and I just stay sitting...I cannot go and play, and run...I am scared of leaking.' Break times are particularly problematic. Everlyn explained that if she tries to go outside the classroom to play: 'Sometimes when you are running you feel as if it will fall out and leak.' Journeys to and from school are especially difficult in rural areas where walks of 1–2 h are not uncommon. In addition to chafing from makeshift sanitary towels, Mercie explained that: 'There is nothing to make it stick! At times they fall down when you are walking!' In this context, it was not surprising to hear Winnie's admission that such journeys are 'very difficult. . .sometimes it stops me from going to school.'

At home too, the spatial mobility of menstruating girls is curtailed as active hobbies such as football are put on hold. Even amongst girls that have access to sanitary towels, fears that their menstruating status might be detected and ridiculed act as powerful restrictions on spatial mobility. Valentine, for example, said: 'When I am on my monthly period I can wash utensils, wash clothes, but I cannot play. . .I am afraid. . .that it can fall down'.

Echoing work by Mensch et al. (2001) and Mason et al. (2013) in Kenya and Sommer (2010a) in Tanzania, other practical limitations on post-pubescent girls' mobility in Kisumu reflected parental fears about unwanted pregnancy (often resulting from exploitative sexual relationships with older men). As girls visibly mature, parental concerns tend to rise about their safety in and on the way to/from school. At this point, many parents start to question the value of continuing their daughters' education and put pressure on them to marry, often refusing to pay school fees or other incidental expenses (uniforms, books, pens). Echoing such fears, a key thrust of puberty-related teaching in Kenyan schools is on the need to prevent early pregnancy (Mensch and Lloyd, 1998; Mensch et al., 2001), with spaces between school and home being

identified as particularly dangerous. Margaret recounted: 'Our teacher told us that at that stage we should be careful with boys' but didn't elaborate on why or how they should be careful. Many girls said that they felt unable to discuss such topics or seek advice from family members so if problems arose, some girls, as the following section will show, sought alternative solutions that led them into exploitative sexual relationships.

The combination of culturally- and self-imposed menstrual 'etiquette' (with attendant restrictions on spatial mobility, social activities and school attendance) and a lack of SRHR education is both productive of and actively reproducing wider gender inequalities in Kisumu. Listening to girls' stories, it was easy to see how the 'collision' (Sommer, 2010a) of everyday challenges relating to managing menses, increased risk of sexual harassment and family pressure to either marry or help with housework can reduce girls' mobility and access to key social capital resources (notably education). Also apparent were some important material realities and gendered power dynamics (Laws, 1990; Nightingale, 2011) underlying these trends that have important consequences for longer-term gender differences in socio-economic mobility.

Puberty, schoolgirl prostitution and the reproduction of gender inequality

Although schoolgirls' sexual relationships were not something that we originally intended to investigate, several FG discussions echoed findings from other Kenyan studies (Mason et al., 2013; Malusu and Zani, 2014) indicating that girls frequently engage in transactional sex in order to obtain money for sanitary towels so that they can attend school. Further prompting on this topic suggested that the seemingly everyday nature of such decisions – especially amongst girls from the poorest households – reflected widespread cultural tolerance of their sexual exploitation.

When recounting the difficulties of accessing re-useable sanitary towels, for example, Winnie commented that 'My parents. . .are not able to afford pads for me', while Valentine said that 'Pads are expensive...I have to go and find the money.' When prompted, the discussion led to a description of how other girls⁵ from resource-poor households had fallen prey to sexual exploitation when seeking money for sanitary products or other basic items like food or soap. Victor described the everyday nature of transactional sex amongst young girls in the rural area where his school was situated as a product of poverty coupled with the region's strongly gendered power dynamics that reinforce girls' vulnerability:

'the girl is in need of a pad, father or mother is not in a position to provide, then you may get a situation, where those who do fishing. . .they get money. . .the only thing they see is to use that money for things like having sex with the schoolgirls. . .the girl may be tempted to get taken in by him. . .it is unfortunate, because you know the girl is forced into this, it is not their interest to become pregnant. . .but following the poverty condition. . .our girls are very vulnerable.'

Corroborating Victor's account, Winnie described how girls in her community frequently engaged in transactional sex for sanitary towels:

'the fishermen are just living around us. . ."if you have sex with me I'll give you everything you ask for" they say, then because you are in need of a pad, you will allow them. . .and in return

⁵ These references to 'other girls' reflect Mason et al.'s (2013:9) observations that it was 'rare for girls to admit they missed school, yet it was common for them to report 'other' girls did so.

they will give you money...they give around 200 shillings...it happens a lot...some just say yes 'cos they need that pad.'

When questioned further on this, however, she indicated that this form of transactional sex had declined amongst her classmates since her school (of which Victor is headmaster) had started providing girls with sanitary towels:

'in class 8 there is nobody going there because they've provided those pads [but] earlier, before they give out these pads, girls do go to those fishermen.'

Respondents from urban schools in our sample reported similar situations with the bike-taxi drivers around Kisumu. Antony described how girls 'are dropping out of school because they...are confused by taxi drivers...and are given money so they are engaging in early sex, and most of them are getting pregnant.' An interview with Angela, a commercial sex worker in Kisumu, shed further light on these problems:

'To make it worse...you will find that that man went with that girl without a condom, and you know that that man used to go with another lady who is...infected [with HIV]...after some months, you see a girl with pregnancy. Pregnant, at the same time...infected.'

Although programs promoting improved sanitary product access can do little to tackle entrenched gender inequalities (and associated cultural tolerance of schoolgirls' sexual exploitation/prostitution), they may help to improve girls' access to social capital resources including education and (in the case of multi-sectoral schemes) SRHR education to compensate for cultural resistance to discussing sexual maturity at home. Several such programs have been developed in Kisumu and in order to contribute to broader debates about the impact of increased sanitary product access on school attendance (Oster and Thornton, 2009, 2011; Lloyd and Young, 2009; Grant et al., 2010; Sommer, 2010a) we undertook participatory observation with three of these initiatives (Project Mwezi, K-MET and the 'Shana pad' initiative) and discussed the effectiveness of their re-usable sanitary towels with girls and teachers at our sample schools.

Improved access to sanitary products and girls' school attendance

A range of charities have been involved in providing sanitary towels to Kisumu schoolgirls but continuity and sustainability of supply have often been problematic. Two schools had previously received donations of disposable pads (including 'Always' which are produced by Procter and Gamble and are widely available in Kenya) but these only brought short-term benefits and the girls couldn't rely on availability. Gloria said: 'when it is an emergency they can always take one, but I know they do not come back to get the next one.' At School D, by contrast, a charity combining menstruation-related teaching with the provision of disposable pads saw improvements in both girls' attendance and grades as fewer girls stayed home when menstruating. Unfortunately, however, the sanitary towels provided by the charity will soon run out.

To help overcome difficulties associated with the long-term sustainability of sanitary product provision, several Kisumu-based groups have designed reusable sanitary towels. Project Mwezi was set up in 2010 by a British student and is funded by charitable donations from the UK plus the small fee it charges participating women's groups for the training and materials it provides (Access-health Project Mwezi, 2014). The project uses participatory approaches to design reusable towels and provides menstruation-related education as well as training on how to sew reusable towels by hand, using second-hand materials. According to

Rachael, one of Project Mwezi's trainees, 'I was taught so many things there!...the money that I used to use in sanitary towels I can now use in other things.'

Most girls who were shown the 'Mwezi towel' during FG discussions were very enthusiastic and the bikini style pad was especially popular for its ability to address problems associated with underwear shortages. Winnie said:

'It is very good...Better than Always 'cos if you only have one packet of Always you use it in one month then it is over. You look for another way of getting another packet, so it is very expensive. And if you get this renewable you are well-off now.'

Teachers were also impressed with the 'Mwezi towel'. Constance said: 'if we can give them these or show them how to make these then it will help a great deal...Maybe if one can get 3 or 4 of these, their monthly will be a lot easier.'

Nevertheless, some class-based differences were apparent in girls' attitudes towards the towels. The poorest state school girls, especially those in rural schools, expressed greater enthusiasm for the 'Mwezi towel' than for 'Always', but wealthier girls at School B preferred the convenience and disposability of 'Always'. Nevertheless, even these girls recognised that they couldn't always afford disposables and valued the idea of making re-usable pads, although they had concerns about how and where they could (discreetly) wash and dry them.

Another type of re-usable sanitary towel has been developed by the 'Sisterhood for Change' program of the Kisumu Medical and Education Trust (K-MET), an NGO set up in 2006 that seeks to address the unmet reproductive health needs of disadvantaged adolescent girls in Kisumu district (K-MET, 2014). K-MET trains 30 girls a year to make re-usable sanitary towels. These are sold locally at an affordable price, but unlike project Mwezi's hand-made towels, K-MET towels are machine sewn. Some of the private schools that K-MET has distributed pads to are so impressed with them that they plan to put them within the school fee package.

The 'Shana pad' initiative was developed by the Kiwanis Club of Kisumu (Kiwanis, 2014) which was registered as a community based organisation in 2010 under the name 'Kisumu Development Initiative'. Kiwanis started to develop reusable sanitary towels in 2007 with help from an international volunteer named Shana. Their aim is to reduce girls' school absenteeism by distributing low priced re-usable sanitary towels to schools. FG discussions indicated a slightly less enthusiastic response to the Shana pad compared to the Mwezi and K-MET towels, but feedback on this product was limited to girls from the football team at School G who participated in FG5 and had been given the product to try. Although most of them were orphans, they had better access to sanitary products than State schoolgirls as they received sponsorships that paid for their fees, meals, uniforms and other supplies. The general feeling amongst this group was that they preferred Shana pads to traditional methods (rags and tissues), but all agreed that their first choice was 'Always' as they were convenient, disposable and stayed in place without leaking, so restricted their activities and mobility less. Afiya said:

'The Shana Pads, we have to wash them. Like if you are at school it takes some time to dry it and you find that someone else will pick it from where you have left it'. The group also complained that they were too thin/small and one girl mentioned that 'They run away when we are playing'.

Conclusion

Echoing Truelove's (2011, 148) FPE-informed analysis of gendered water inequality in Delhi, we observed a re-patterning of

schoolgirls' everyday spatial movements when they reached puberty resulting in a 'simultaneous re-shaping of life opportunities' as their access to social capital assets – especially education – was curtailed. The role of emotion as an influence on girls' spatial mobility and school attendance also reflects [Sultana's \(2011, 171\)](#) findings that emotional geographies of gendered resource access provide FPE with improved understandings of lived experiences and how 'embodied subjectivities play a role in the way that...resources come to influence everyday life.'

Although we didn't make quantitative examinations of the relationship between sanitary product access and girls' school attendance, qualitative data from girls and teachers in our study area clearly suggested that improved access could address some key emotional and practical problems underlying girls' absenteeism. Especially important is their role in reducing the risk of shame/embarrassment from visible menstrual leaks, which in turn helps girls to concentrate better and feel more confident as well as allowing them greater spatial mobility within and outside school. Products like the Mwezi, K-MET and Shana towels have potential to address everyday menstruation-related challenges that present significant practical restrictions on girls' spatial and wider socio-economic mobility as well as more symbolic challenges associated with hiding their menstruating status. They can also help address some of the practical and emotional difficulties associated with girls travelling to school when menstruating, especially in rural areas where such journeys are typically longer and (although this was not the case in our study) toilets may be absent or non-functional.

Nevertheless, a lack of sanitary towels is one amongst many reasons why girls may miss school ([Mensch and Lloyd, 1998](#); [Mensch et al., 2001](#); [Lloyd and Mensch, 2006](#); [Grant et al., 2010](#); [Sommer, 2010a](#); [McMahon et al., 2011](#); [Mason et al., 2013](#); [Malusu and Zani, 2014](#)). The inconvenience/pain of menstruation can be important as can wider gender norms that give girls responsibility for household or farm-based work and restrict their mobility, as they mature, in an attempt to prevent unwanted pregnancy. Indeed, several FG participants expressed a sense of being caught between traditional expectations about gender roles and female behaviour centred around the home/family and a desire to adopt more modern practices such as obtaining a good education followed by a career. Secondary education was an important aspiration with many girls (particularly those from wealthier families) expressing the view that they were just as entitled to an education as boys. Parental pressure on post-pubertal girls to leave school, meanwhile, often reflected fears about sexual assault and tended to be higher in rural areas where school journeys are generally longer and more likely to involve girls travelling alone.

Poverty also plays an important role in parental decisions about withdrawing girls from school and is a key factor pushing young girls into transactional sex or prostitution. Unfortunately, severe poverty can make it difficult for such girls to make reusable sanitary towels as other demands on their time can restrict opportunities to gain tailoring skills ([Access-health Project Mwezi, 2014](#)). Additional barriers include cultural tolerance of gendered violence and girls' sexual exploitation coupled with cultural taboos/etiquette and broader emotional constraints that discourage open discussion of menstruation ([McMahon et al., 2011](#); [Mason et al., 2013](#); [Malusu and Zani, 2014](#)). These were apparent in both rural and urban schools.

Indeed, an important gap has been created by the decline of traditional teaching on menstruation and sex in a community setting that is not currently being tackled effectively either at home or in school. This makes it difficult for girls to manage their menses with dignity and achieve a better understanding of the sexual risks/diseases that are more likely to affect them than boys. Efforts to address this gap include multi-sectoral schemes like Project Mwezi

and K-MET that combine sanitary towel provision with health education to help address key practical and cultural challenges surrounding menstruation and girls' sexual maturity. In very favourable circumstances, such schemes may even help to challenge wider societal power relations by helping to tackle gender inequalities in school attendance, spatial mobility and longer-term livelihood options.

For such goals to be achieved on a more sustained and large-scale basis, however, a more strategic approach is needed. This could include compulsory sex education, better training for teachers on such topics, and earlier teaching of MHM to ensure that girls receive it before reaching menarche ([Mutunga and Stewart, 2003](#); [Malusu and Zani, 2014](#)). Echoing this, [Mason et al. \(2013, 8\)](#) highlight the success of programs such as 'Families Matter' ([Vandenhoudt et al., 2010](#)) which emphasise parent-child communication on sex-related issues and have successfully implemented evidence-based sexual health education via government-based school and health infrastructure. The expansion of such programs could help to close the knowledge gap that many girls have about puberty, MHM and sexual/reproductive health. The addition of a more dedicated 'rights' based emphasis within SHRH packages at both school and community levels, meanwhile, may help to challenge the widespread cultural acceptance of girls' sexual exploitation/gendered violence and tackle some of the pressures that put girls at risk of such harms ([Mason et al., 2013, 9](#)).

Within schools, efforts to tackle sexual harassment (from both teachers and pupils) coupled with improved access to sanitary towels, disposal bins/bags and safe toilet spaces with washing facilities in which girls can manage their MHM needs will do much to improve their overall educational experiences. [McMahon et al. \(2011\)](#) also recommend policies that necessitate the employment of a female staff member in all schools as well as the distribution of books to schoolgirls that explain MHM, in very simple terms (e.g. [Sommer, 2010b](#)). Outside school, better transport or supervision systems for journeys to and from school would benefit rural girls in particular. At a more global scale, meanwhile, initiatives by international organizations like the World Toilet Organisation (WTO) are improving awareness amongst state and development actors of the need to consider gender issues (including MHM) when developing sanitation programs and policies ([Greed, 2014](#); [WTO, 2014](#)).

Given the spatially-specific nature of the cultural beliefs, taboos and etiquette that influence everyday geographies of menstruation/puberty and which in turn are productive of and reproduce wider gender inequalities and power relations, there can be no 'one size fits all' solution. Schoolgirls' menstruation experiences can vary widely over relatively short distances, depending on the facilities present at the school they attend, its rural or urban location, the gender balance of its teaching staff and the extent of parental support provided. Policies seeking to promote opportunities for girls to 'pursue their education and the future careers they imagine' ([Sommer, 2010a, 525](#)) must therefore be 'informed by understandings of local social and cultural attitudes and perspectives on the significance of menstruation for girls and their families' ([Kirk and Sommer \(2006, 12\)](#)).

The multiple power dynamics underlying gendered constraints to educational access plus wider restrictions on spatial mobility, meanwhile, require deeper understandings of the 'intersection of the symbolic and the material' ([Nightingale, 2011, 155](#)) within different socio-economic, ethnic and regional settings. Some of these ideas have been taken on board as part of 'software' approaches within the sanitation sector which recognise important cultural and regional (especially rural/urban) differences in hygiene knowledge and demand for sanitation 'hardware' ([Jenkins and Sugden, 2006](#); [Peal et al., 2010](#)). Yet MHM remains a relatively neglected sub-sector of this field and there is an urgent need for more detailed empirical work on how girls' experiences of menstruation and pub-

erty vary in different geographical (including rural versus urban) and cultural contexts. Theoretically, meanwhile, Kirk and Sommer (2006, 12) identify a conceptual challenge from feminist theory to 'work on menstruation issues in a strategic way and avoid further entrenching notions of the female body as 'messy', 'leaky', 'disruptive' and problematic to the serious processes of teaching and learning'. FPE approaches highlighting how everyday geographies of menstruation/puberty are both productive of and reproduce gendered power relations and inequalities in access to social capital resources seem an appropriate tool for addressing this challenge.

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