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## Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania

Marni Sommer\*

*Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, 722 W. 168th Street, Fifth Floor, New York, NY 10032, USA*

### A B S T R A C T

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The global development community has focused in recent decades on closing the gender gap in education, but has given insufficient attention to the specific needs of pre- and post-pubescent girls as they transition to young womanhood within the educational institution. This study explored the social context of girls' experiences of menses and schooling in northern Tanzania, with data collection focused on capturing girls' voiced concerns and recommendations. Results indicated that pubescent girls are confronted with numerous challenges to managing menses within the school environment. Many are transitioning through puberty without adequate guidance on puberty and menses management, and pursuing education in environments that lack adequate facilities, supplies, and gender sensitivity. Girls have pragmatic and realistic recommendations for how to improve school environments, ideas that should be incorporated as effective methods for improving girls' academic experiences and their healthy transitions to womanhood.

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### Introduction

"No more hopscotch (rede)"...a remark made by young women as they recounted what they missed most about the girlhood years. Following this were expressions of dismay over their M.P. (monthly period)...the latter being what they liked least about growing up. – Fieldnotes on discussion with research assistant, 3/21/07

This article describes the social context and lived experiences of menstruation and schooling for pubescent girls in northern Tanzania, highlighting girls' voiced recommendations for making school environments more girl-friendly and school curriculum more attuned to girls' needs. In recent decades, the global education community has focused on closing the gender gap in schooling, with particular emphasis on universal access to primary education, and concern about girls' lagging transitions to secondary school (DFID, 2005; UNESCO, 2004, 2005; UNICEF, 2003, 2006). In sub-Saharan Africa, 57% of all girls attend primary school, with only 17% enrolled at the secondary level (Herz & Sperling, 2004). An important facet of this gap, the relationship between menstrual onset and schooling, has remained under-addressed in research, programs, and the scientific literature. The significant life event of puberty, and in particular the social, cultural, and physical implications of menarche, and of becoming a young woman within society, may be disrupting pubescent girls' abilities to perform

\* Tel.: +1 212 305 1826.

E-mail address: [ms2778@columbia.edu](mailto:ms2778@columbia.edu).

academically and complete their schooling. Small efforts have begun across sub-Saharan Africa to understand the challenges of maturation and schooling for girls (Kariuki & Kakonge, 2000; Kirumira, 2004; NUEW & CRS, 2002), but the focus has remained on the physical management challenges of menses rather than taking a more broadly contextual approach that examines the ramifications of “coming of age” in the school environment and larger society.

## *Background*

### *The onset of menses*

Menarche is presented in cultures around the world as a critical moment in a girl's transition to young adulthood (Brooks-Gunn & Petersen, 1983; Buckley & Gottlieb, 1998; Mensch, Bruce, & Greene, 1998; Turner, 1969; Van de Walle & Renne, 2001). Alternatively celebrated, hidden, cried over or rejoiced at, the moment of first bleeding has remained under-researched and under-addressed in health and education programs in developing countries (Bharadwaj & Patker, 2004; Chrisler & Zittel, 1998; Hoerster, Chrisler, & Rose, 2003; Teitelman, 2004). There is a great need to understand present-day responses and cultural values around menses; and any related consequences its onset may have for girls' educational experiences. Ethnographic accounts about the meanings of menstruation among different ethnic groups in Tanzania provide evidence that taboos and rituals existed at one time, and that initiation rituals, which often included female circumcision, were important for passing down guidance on reproductive health, menstrual management and sexual behavior (Brown, 1932; Roth-Allen, 2000). While beliefs and practices continue among certain ethnic groups, such as the Maasai and Zaromo, there is concern that the advent of compulsory schooling inhibits the ability of communities to carry out time-intensive rituals (personal communication, Dr. Siriel Massawe). The latter, along with rural to urban migration, is contributing to the breakdown of traditional family methods of conveying maturation instruction (such as grandmothers and aunts passing advice to girls), leaving newly post-pubescent girls to potentially suffer shame and dislocation without guidance on the meanings and management of menses (Sommer, 2009). To understand girls' present-day experiences of menarche and schooling within northern Tanzania, an exploration of the impact of modernization, migration, and other influences on shifting gender roles, and family life is essential. Most critical is the capturing of girls' voiced perspectives.

### *The link between menses and schooling*

Although the topic of menses remains to some degree taboo in the West, school girls are able to successfully hide their menstruating status, and escape potential stigmatization from school mates or others who might mock or harass girls during monthly bleeding. Western school girls usually have access to factual puberty information, adequate numbers of toilets, an abundant supply of clean water, privacy, affordable sanitary materials and undergarments for managing menses, pain medication, and female teachers and/or school nurses who are understanding and supportive of girls' menstrual-related complaints. This does not mean that Western girls always have an easy transition through the onset of menses and pubertal body changes, one without social disruptions and peer antagonism (Burrows & Johnson, 2005; Chrisler & Zittel, 1998; Roberts, Goldenberg, Power, & Pyszczynski, 2002). However Western girls mature in social and school environments (for example, those with readily available toilets and pads) that enable the private management of the more potentially stigmatizing aspects of the pubertal experience.

In contrast, the social and economic context of Tanzanian girls' lives make them less able to “pass,” a term Goffman used to describe how stigmatized individuals evade suspicion of their perceived stigmatized condition (Goffman, 1963). Newsletters and reports from African women's education groups and non-governmental organizations (NGOs) across sub-Saharan Africa report on the lack of latrines and clean water supplies on school grounds; the unaffordable nature of sanitary materials (such as modern pads); the likelihood that school girls are absent 3–4 days per month rather than confront managing menses on school grounds and risk embarrassment of a menstrual “leak”; the harassment of school girls by male students who suspect they may be menstruating; the potential for post-pubescent girls to be targeted for sexual abuse and to be at risk for unwanted pregnancy and family dishonor (Binka, 2003; Kirumira, 2004; NUEW & CRS, 2002; Stewart, 2004). Given the potential for all of above to disrupt girls' ability to attend and concentrate in the classroom, there is an urgent need to explore and document girls' present-day experiences of menses and schooling.

With the heavy focus on increasing access to education, there has been less focus on how formal educational institutions may reinforce gender norms of the wider society. The literature stresses the importance of understanding the socioeconomic context of girls' lives, and its influence on their schooling experiences, pointing to sociologists' suggestions that the school environment may perpetuate societal gender inequalities (Connell, Ashenden, Kessler, & Dowsett, 1982; Mlang'a O-saki & Agu, 2002; UNESCO, 2004; UNICEF, 2003). Tanzanian primary schools, as schools elsewhere in sub-Saharan Africa, have been shown to reinforce gender norms through the assignment of domestic-like chores to girls; through the greater attention and academic support to boys; through the lack of adequate water and sanitation facilities provided for post-pubescent girls who have to manage menstrual flow; and through the increased risk of sexual abuse by staff or fellow students that girls must confront (Komba-Maleka & Liljestrom, 1998; Mlang'a O-saki & Agu, 2002). Understanding the social structural challenges within the school environment from school girls' perspectives, ranging from the lack of latrines, the inadequate water supply, to male-dominated staff, is an essential first step to identifying effective interventions.

Much of the literature on education refers to the perceived increase in girls' school dropout subsequent to the onset of puberty (Bendera, 1999; Mensch et al., 1998; UNFPA, 2003). Education statistics from sub-Saharan Africa, although sometimes

of questionable validity, demonstrate a decrease in attendance during the latter primary years, and particularly after primary school completion (UNDP, 2006; UNESCO, 2005). The documented reasons for dropout are numerous, ranging from increased household responsibilities, family preference for educating sons when limited funds are available for school fees, pressure to get married, premarital pregnancy, and parental concerns about school safety. The topic of menses has received minimal attention, and is central to the hypothesis underlying the study presented in this article: that a “collision” occurs as girls’ bodies mature in school environments that continue to be gender discriminatory. The result of this collision is an unnecessary, and preventable, interruption to girls’ active school participation and attendance.

### *The present research*

The overarching study focused on girls’ experiences of menstruation, puberty and schooling in urban versus rural Kilimanjaro, a region in northeastern Tanzania near the border with Kenya. Kilimanjaro has a long history of Western influence, ranging from missionaries and colonialists in the early part of the century, to tourism and international non-governmental organizations today. The region has a range of diverse ethnic groups (for example, Pare, Masai) but remains predominantly Chagga, a group with less dramatic traditions remaining around the onset of menses than other Tanzanian ethnic groups, and one known for supporting girls’ education. Kilimanjaro was intentionally selected given it has one of the highest female literacy rates in the country (NBS and ORC Macro, 2005). The assumption being that if girls were found to be struggling with menses and schooling in Kilimanjaro, there would be legitimate reason to suspect the issue was important to examine nationwide.

There were many reasons for conducting an urban versus rural comparison of girls’ experiences, which are detailed elsewhere (Sommer, 2009). The primary reasons were the documented different gender gaps in urban versus rural schooling rates, and the expected differences to be found in the availability of water and sanitation facilities, the strength of menstrual taboos and rituals, and the influences of modernization.

To best incorporate girls’ perspectives within the broader social context of their lives, we conducted a comparative case study (rural versus urban) with a specific focus on using participatory methods with girls. We utilized multiple methods to elicit girls’ experiences about growing up today in Kilimanjaro, including the challenges they face in school when transitioning through puberty, and their ideas for improving the school environment. This paper will specifically highlight girls’ voiced recommendations for social and structural solutions in the school environment and curriculum that address the body-school collision experienced by pubescent girls growing up in northern Tanzania today.

### *Research setting*

The key aspects of the research setting included the social and economic characteristics of urban (Moshi) as compared to rural (Rombo) districts in Kilimanjaro (additional details, see Sommer, 2009). Moshi is well populated, with crowded streets filled with businesses, Internet shops, and a growing number of hotels catering to Western tourists. There are health clinics, hospitals and numerous pharmacies, the latter of which sell menstrual-related sanitary supplies (for example, pads, cotton wool, small towels) for women who can afford them. There are a large number of public and private schools, and vocational training centers for school drop-outs to attend. In contrast, rural Rombo includes the town of Mkuu, with minimal small shops along dirt roads. A number of public and private primary schools are located around town and in nearby villages, however secondary school options and vocational training centers remain limited. The town has a large hospital, and minimal health clinics. There is limited Internet availability, and almost no Western tourists.

In Moshi, a secondary boarding/day school served as the source for in-school research participants, with a vocational training center serving as the source for school dropouts. In Rombo, a secondary day school served as the source for in-school participants, with a center for out-of-school youth run by a local mission serving as the source for school dropouts.

### **Methods**

The comparative case study design included observation (classroom, public market area, school grounds), archival analysis (policy documents, curriculum, attendance records), semi-structured in-depth interviews of adolescent girls and adults in their daily lives (for example, parents, teachers), secondary data analysis, and participatory activities with girls (Sommer, 2009). This article will focus on selected findings from the group participatory activities and the in-depth interviews with in-school and out-of-school girls (aged 16–19), from which recommendations for improving the school environment and curriculum emerged. We intentionally sampled girls who were likely to be post-menarcheal given the expected sensitivity of the subject material, and our interest in capturing older girls’ perspectives on how to improve school environments for future generations of girls moving through the formal school system. Analyses of relevant observation data and school curricula will also be incorporated.

The study was approved by the Columbia University Medical Center Internal Review Board and COSTECH, one of the ethical review boards for approving health and social science research in Tanzania.

### Procedure

The use of participatory approaches was essential for creating a more equalizing and active exchange between the research team and participants, while also enabling the collection of sensitive information through a methodological approach shown to empower research participants (Israel, Eng, Schulz, & Parker, 2000; Minkler & Wallerstein, 2003; Sommer, 2009). All verbal group activities were translated concurrently from Swahili to English by the Tanzanian research assistant. Written activities were submitted anonymously by the girls in Swahili, coded, and translated into English for analysis. No names were recorded on any of the activity responses to assure confidentiality, and encourage participants' comfort level in discussing sensitive issues. The following activities will be discussed: 1) *One hundred million shillings*: groups of girls were asked to brainstorm (and submit lists) on how they would improve the school environment for girls if they were given this imaginary large sum of money; 2) *Drawing the perfect girls' toilet*: interested girls were given paper and pencil to draw a water and sanitation facility that would be perfect for school girls going through puberty (menses); 3) *Negatives and positives of being a woman*: each girl was asked to write in Swahili the positives and negatives of being a woman in Tanzanian society; 4) *Good and bad of growing up*: each girl was asked to write in Swahili the good and bad things about being a young woman as compared to being a girl; and 5) *Growing up curriculum*: in groups, girls were asked to design a "growing up" puberty curriculum for the government. The latter activity identified gaps in girls' level of puberty knowledge reported elsewhere (Sommer, 2009) with the data collected on girls' recommendations advising the government on improvements to the school curricula described in this article.

The use of semi-structured in-depth interviews with adolescent girls was important for gaining insights into local meanings and social expectations around a girl's first menses, and any implications the onset of menses and puberty might have for girls' school-going experiences and social relations with peers and other community members. Interview topics included girls' first menstrual experiences; the ways menstrual and pubertal onset have impacted on their lives in and out-of-school (and on the lives of girls they have observed); and their knowledge and understanding about developmental maturation and body change (Sommer, 2009). As with the participatory activities, the majority of interviews were conducted in Swahili with concurrent translation. After the girls indicated a significant discomfort with the use of taping devices, and a hesitancy to discuss sensitive information while the tape recorder was on, the research team determined it was more important to record more in-depth responses captured through note-taking than collecting precise but more limited quotes from a recording. Therefore extensive note-taking occurred during and after interviews, with extra time allotted to assure girls' views were adequately captured. All girls provided informed consent, with interviews conducted in a confidential location.

### Participants

The research included school girls (Forms 2–4) and school dropouts in an effort to explore if and how the onset of menses and puberty might be factors in girls' decision to leave school prematurely. While our focus was primarily on girls of Chagga ethnicity, we allowed for the inclusion of participants from other ethnicities (for example, Pare, Maasai) who were enrolled in the schools or vocational centers, given the Kilimanjaro region's changing demography and the importance of capturing a diversity of growing up experiences. Participating girls were selected subsequent to in-depth discussion and consultation with school/center administration, with a specific request made by the research team to identify girls who represented a diversity of backgrounds (for example, economic, family structure, academic ability, commute to school). All participants provided informed consent prior to commencement of activities.

### In-depth interviews

Interviews were conducted with 16 girls (aged 16–19), 8 in each of the research sites, both in-school and school dropouts. In Moshi, 4 in-school and 4 school dropouts were interviewed; in Rombo, 6 in-school and 2 school dropouts were interviewed (the rural area proved more difficult for identifying school dropouts).

### Participatory activities

In the urban site, three groups of in-school girls and one group of school dropouts ( $n = 20$  per group) were selected, with each group meeting once per week (for 4 weeks) in a confidential space. In-school groups were selected and grouped based on grade and by boarding or day student status. In the rural site, two groups of in-school girls ( $n = 10$ – $20$  per group) were selected as the school had a smaller population. Girls were grouped based on grade level, as all girls were day students (meaning day commuters). We were unable to access sufficient numbers of girls who had dropped out of school in the rural site to form a group for participatory work, due to economic-related demands on girls' daily schedules.

### Data analysis

We utilized grounded theory to analyze the multiple sources of data, illustratively including fieldnotes, narrative notes, interview transcripts, analytic memos, and data collected through participatory verbal and written activities (Charmaz, 2006; Cresswell, 2007; Sommer, 2009; Strauss & Corbin, 1998). Systematic analysis began with multiple readings of the fieldnotes to generate themes and hypotheses, followed by coding of the narratives, transcripts, and participatory write-ups. Open coding

was used to identify appropriate categories, themes and issues that emerged from the data (Emerson, Fretz, & Shaw, 1995), with axial coding used to build connections within categories. Feedback on preliminary findings and emerging themes was sought from senior Tanzanian experts on gender and education, along with key informants in each of the sites. On-going analysis permitted the research team to integrate the local expert's insights into the final selection of priority themes from the research. The major themes that emerged and will be discussed in this article included: (1) the experience of transitioning from girl to woman in society; (2) the challenges faced by post-pubescent school girls; and (3) girls' recommendations for social structural and curricular reform. Both urban and rural girls' experiences will be discussed; with themes from the data analysis illustrated by quotations derived from the various activities, interviews, and illustrations. All names have been coded to protect girls' identities (numbers do not represent chronological ordering of girls' responses).

## Results

### *The experience of transitioning from girl to woman in Tanzanian society*

The most significant finding regarding school girls' transitions to young womanhood in Kilimanjaro today is the way in which girls are caught between contradictory messages about conforming to traditional practices and social behaviors, while simultaneously pressured to adopt more modern gender roles and freedoms. Familial social structures and the underlying patriarchal nature of society continue to affect the overburdening of girls with household responsibilities and pressure to demonstrate one's fertility, while growing societal beliefs in the benefits of education give girls hope of an expanded future outside of the home. The group activity exploring the perceived negatives and positives of being a woman in Tanzanian society highlighted these conflicting pressures. Excerpts from group lists capture girls' perspectives:

[Urban in-school Group#1]

*Positive: If you become a woman, it means you can bring development into the society because you are now grown up; A woman is the one who watches the family; A woman is a good example in the society; You become beautiful; You are free to become a mother; You become a source of income in the family/society.*

*Negative: You get pains when menstruating; You have expenses of buying pads; You get disturbed by boys; You are shy.*

[Urban in-school Group#2]

*Positive: To have babies; To become the mother of the family.*

*Negative: Women are used as a tool for pleasure; They finish their money every month because of buying pads; They are used as a tool for duties/work; They are approached by men; They become pregnant; They must take care of children.*

[Urban in-school Group#3]

*Positive: A good woman is a mother; To stay at home with your husband who brings money for taking care of the children; The society has a special look for its women, as in they will fight for their rights.*

*Negative: To buy pads every month; To have cramps when they are bleeding; When you are denied your rights – the rights that a man gets and you don't get; To have pain of childbirth.*

The excerpts from all three groups indicated the pressure to demonstrate one's fertility, while girls simultaneously expressed frustration at being denied equal rights (Group#3) and at responsibilities associated with motherhood (Group#'s 2 & 3). This finding was subsequently verified by group brainstorming about what girls wanted to be when they grew up, with urban and rural girls reporting a range of jobs including: lawyer, journalist, doctor, President of Tanzania, geologist, pilot, engineer, lecturer, accountant. When asked if they also wanted children (all groups gave an enthusiastic "yes!"), girls were asked who would take care of the children while they worked. The universal response was "house girls" and not their husbands (evidence of social class and gendered roles that will not be explored in-depth in this article).

A related activity querying girls on the good and bad about growing up revealed an overall positive view of becoming a young woman, except for reported dismay over menstruation and harassment from boys and men. Girls' individual lists provide insight into their perspectives:

[Rural in-school Girl#1] I am happy and I'm worried because sometimes when I'm menstruating, I might have a lot of blood coming out, so I'm worried, and sometimes I'm happy because the young ones respect me.

[Rural in-school Girl#2] I feel happy/good when I see my body is changing, for example, I see myself I have become attractive.

[Rural in-school Girl#3] I am happy but also worried because [men] are disturbing me.

Most girls described feeling beautiful and the pleasure they took from now being permitted to apply lotions and make-up, along with feeling good to be grown up. The suggested reasons revealed upon probing being that girls liked to have boys and men notice them, despite the simultaneous concern over how to manage new attention from boys and men (Sommer, 2009). The number of concerns related to menstrual onset as a negative of growing up suggested insufficient guidance, sources of information, and facilities are available. However, the girls' positive feelings about their bodies overall suggest important social and cultural local meanings about growing up that might be useful in addressing the low self-esteem many Western girls are documented to experience as their bodies develop into young womanhood (Bolognini, Plancherel, Bettschart, & Halfon, 1996; Siegel, Yancey, Aneshensel, & Schuler, 1999).

Specific findings on the shame and confusion many girls experienced upon reaching menarche, and the lack of pragmatic knowledge they had about pubertal body change are discussed in-depth elsewhere (Sommer, 2009). The latter discusses findings on the shifting nature of family life in Tanzania, and how the separation of girls from traditional family structures is diminishing the conveyance of puberty guidance, and girls' abilities to manage sexual pressures arising post-pubescence.

#### *The challenges faced by post-pubescent school girls*

The onset of menses and puberty were found to introduce restrictions into girls' lives inhibiting girls' abilities to pursue their education and the future careers they imagine. Excerpts from in-depth interviews with both in-school girls and school dropouts spoke to the changed nature of girls' post-pubescent lives:

[Rural in-school, Girl#4] She was told not to walk carelessly, meaning when she moves out of the house, she should always say where she is going and not go and do something else. And she was told to return to the house by 6pm (although the boys in the family are not restricted) – the reason being that boys are stubborn naturally and won't listen if they're given a curfew – and for the girls, they might get pregnant or raped if they are out late.

[Urban school dropout, Girl#5] Yes, it may happen [changes in girls' lives post-pubescence] because at home there are local beliefs – their parents/families tell girls they can now get married because they are grown up – then at school they have [menstrual] pain and are disturbed – so that may lead them to decide to listen to their families and leave the school.

[Urban in-school, Girl#6] She is supposed to be home by 6pm and if she is late, depending on the explanation that she gives, she might be chased away to where she was – or taken back there – so if she has been with a man, they will have to get married.

The challenge, many girls recounted when probed, was that the restrictions on movement prevented group discussion about school assignments, and study support. In addition, new hurdles arose for girls faced with managing menses in the school environment, as noted above by Girl#5's reference to pain (menstrual) in school. Girls expressed frustration with the challenges around managing menses en route to and in school. Their concerns were validated by the research team's observations of insufficient school water and sanitation facilities, and the unaffordability of sanitary materials in the marketplace. This confluence of factors may push girls who are already struggling with their academics or pressures from home to decide to stop attending school. Girls' comments specifically highlighted the gender discriminatory nature of the school physical environment, and the peer dynamics that intrude on their comfort level while attending school during monthly menses.

[Urban in-school, Girl#7] It is difficult – one, because the dorms are mostly closed all the time – even during break sometimes (so you cannot go there to change), and two, we cannot go to class with pads because boys check our bags and tease us...so we have to wear the same pad the whole day until around 2pm...and so it is a bad environment.

[Rural in-school, Girl#8] In primary school it was a problem because girls were so young, they could have accidents and did not know how to manage. Some [boys] tease them in primary – they tease them in secondary school too – it does not necessarily have to do with menstruation – they come and touch you to disturb you – so it has more to do with body changes in general.

When Girl#8 was probed about how the onset of menses and puberty may or may not impact girls' schooling, she responded by noting that when girls are menstruating, *“they do not participate – they feel tired – and their academic performance goes down. The teachers do not help the girls – if a girl has an accident or bad cramps, she will go home – the teachers will not know she has left.”* From the range of interviews conducted, school matrons (or guidance counselors) and teachers received mixed ratings in terms of providing menstrual-related support (Sommer, 2009). The majority of students reported hiding their menses from both female and male teachers, although on occasion, teachers were commended for allowing a girl to be excused if she complained of feeling “sick” or, some female teachers, for assisting a girl with a menstrual accident by lending her a *kanga* (cloth) to cover the back of her uniform. The girls almost never indicated to school authority figures that menses was the cause of fatigue or illness for absences. The latter made it difficult for the research team to utilize school attendance records as a quantitative measure of the impact of menses on monthly school attendance.

#### *Girls' recommendations for social structural and curricular reform*

The group activities also revealed valuable and pragmatic suggestions on how to improve the school environment for younger girls moving through puberty. The one hundred million shilling activity offered girls an opportunity to brainstorm collectively, with similar lists generated by all the groups, as the following excerpts demonstrate:

[Urban school dropout Group#4]

*Use it to buy pads because when a girl is in school, it would be easier for her – easier to create an environment in which she can concentrate more on studies and have less disturbances (meaning, she won't have to think about where to get pads). Publish a lot of booklets, materials to educate girls about their “days” (menses) so that they can be in a good [school] environment.*

## [Urban in-school Group#5]

*Use it to build toilets which have water taps; to build a place to burn pads which is far from the boys' areas; to buy tools for cleaning in toilets; to make books to help young girls who are growing up; to buy sanitary pads for girls most of the time in schools (continuous supply); to make a place where girls can rest during class time, especially when menstruating.*

The above findings were further supported by the drawings of the “perfect girl's toilet” activity, in which almost all the girls illustrated a water supply being available inside of pit latrines, adequate locks on the doors and cleaning supplies, and an incinerator or other burning facilities. The suggested reasons for the water being available inside the latrine was to enable girls to wash off any signs of blood from their hands, and to protect against girls standing near the latrines who might gain some (negative) power over a girl from knowing about her menstruating status. The latter had deeper cultural implications which will not be explored in this article.

The puberty curriculum design activity, although not addressing girls' concerns over teacher's shyness and/or hesitancy to cover what is currently included in the Ministry of Education's school curricula (basic sexual and reproductive health information in biology class for primary and secondary school), did provide important insights into the pragmatic menstrual management and sexual pressure guidance girls are seeking. The gaps this activity revealed in girls' knowledge about their bodies are described elsewhere (Vavrus, 2006; Sommer, 2009), however of great importance, and highlighted below, are girls' suggestions of topics to be included in a puberty curriculum to be recommended to the government for younger girls:

## [Rural in-school Group#6]

*We are advising the government to include a topic which has things to do with girls growing up – about menstruation and how to use pads. They should be taught...not to have love relationships because they will be in danger of getting different kinds of diseases and pregnancy. There should be people to teach them how to clean themselves. We are insisting...that there should be people who go to different schools and teach them about growing up things, how they should manage when they are in their “days” (period) and they are at school and when they have cramps.*

## [Rural in-school Group#7]

*We would like to advise the government to teach Standard 7 students up to Form 1 about growing up, so even if they reach that stage, they won't get problems during menstruation. It would have been better if primary school students would have been taught when they are in Standard 6; it would have been very good because you will find a girl who is very old and she may start menstruating in Standard 6; that is why we would like them to be taught when they are in Standard 6. We would really love if the government had done that.*

Although the activity instructions provided to the girls were to advise the government on curriculum details, multiple groups of girls went a step further and commented on the timing of the guidance, requesting that the government teach girls about their changing bodies and menses at a younger grade level in school than the current curriculum is aimed, so that girls would not be shocked or confused about how to react and respond to menarche and other pubertal changes. Upon probing, the advice to have puberty trainers who would travel to different schools was related to girls' discomfort with male teachers in the schools (although many biology teachers seemed to be acceptable conduits of information), the shyness of female teachers, and to the disciplinary nature of their current relations with teachers and/or school matrons. The latter were suggested by girls to make any confidential health discussions uncomfortable if not impossible.

## Discussion

This study, exploring how the onset of menses and puberty may be disrupting girls' school-going experiences in the Kilimanjaro region of northern Tanzania, provided insights into girls' perspectives on becoming a woman in Tanzanian society, the challenges they face in managing school post-menarche, and their recommendations for how to improve the school environment for other girls transitioning through puberty. The findings reinforce the minimal empirically-based literature available on the challenges of pubertal onset for school girls across sub-Saharan Africa, while reinforcing the great importance of capturing girl's lived perspectives on contextual factors impacting on their lives in a modernizing society (Kariuki & Kakonge, 2000; Kirumira, 2004; Stewart, 2004).

The multiple research methods utilized demonstrated that, as in the West, girls have mixed emotions about reaching puberty and managing menses, particularly in navigating the coed school environment and shifting peer dynamics (Beausang & Razor, 2000; Burrows & Johnson, 2005; Koff & Rierdan, 1996; Teitelman, 2004). The findings emphasized the challenges of hiding their menses in school environments as they currently exist, highlighting the structural changes (such as improved latrines, water supply inside latrines, cleaning equipment, and incinerators) that would better enable future generations of maturing girls to transition through puberty in school. Girls' recommendations for a more useful puberty curriculum, both in content and delivery, provide direct guidance on how to overcome some of the negative reactions to menstrual and pubertal onset that girls currently experience. The importance of utilizing participatory methods to empower girls and to capture their experiences and recommendations cannot be overstated (Sommer, 2009).

The group work on the positive and negatives of being a woman in Tanzanian society highlights the contradictory messages girls are experiencing about traditional behavior (such as demonstrating fertility and childrearing, and obeying restrictions on movement outside the home) versus pursuing an education and career driven future. This experience is not unique to girls living in the Kilimanjaro region, as evidenced by literature from elsewhere in Tanzania and sub-Saharan Africa

(and the West), but emphasizes the need for adolescent health and education interventions to take into consideration and address the conflicting pressures girls are growing up under today (Chege & Sifuna, 2006; Gregson, Terceira, Mushati, Nyamukapa, & Campbell, 2004; Heward & Bunwaree, 1999; Mibilinyi, 1998; Vavrus, 2004). The attention girls placed on challenges pertaining to menstruation once becoming a woman, such as the cost of pads and the discomfort of cramps, noted directly alongside of being denied the same rights as men and being used as an instrument of labor, suggests that higher prioritization should be placed on easing the experience of menses for girls and women, be it economic solutions to the cost of pads (such as policies to remove import taxes and/or local production of pads), or assuring the affordability of essential medicines (such as pain analgesics) if they are a socially and culturally acceptable solution alongside of traditional methods of pain relief (such as hot water pads).

The group activity that generated recommendations of social and physical improvements within the school environment is particularly important given the numerous gender and education programs and campaigns that are underway across sub-Saharan Africa and specifically in Tanzania (DFID, 2005; Kane, 2004; Ministry of Education, 2008; UNESCO, 2004; UNICEF, 2006). There are numerous programs and policies being implemented, many of which focus on training teachers to be aware of gendered responses to students, the gendered nature of school curricula, the dominance of male teachers, and the importance of separate and private latrines for girl and boy students (Clark, 2005; Herz & Sperling, 2004; Muito, 2004; Snel, 2003; UNICEF, 2003). This study's findings expand the notion of the gendered school environment, emphasizing the unique needs of girls' post-pubescence, and the pragmatic ways in which schools can become more girl-friendly through girl-derived solutions.

This study was limited given its in-depth exploratory design, and the inability to measure quantitatively the impact of menstrual and pubertal onset on girls' participation and attendance in school. Further research on implementing and evaluating interventions for improving the school environment and growing up experience for girls is strongly recommended. Nevertheless, the significance of girls' voiced recommendations on how to make schools more girl-friendly, and the realities of growing up in a modernizing society make an important contribution to the literature on health and education approaches with girls in sub-Saharan Africa today, and emphasizes the critical importance of girl-centered approaches to research and intervention.

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