

An Early Window of Opportunity for Promoting Girls' Health: Policy Implications of the Girl's Puberty Book Project in Tanzania

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Abstract

The onset of puberty, and specifically menstruation, is an opportune moment for reaching girls as they transition into adolescence and young womanhood. Despite the importance of this transitional period, the reproductive health community has tended to overlook the onset of menstruation and early puberty in global, national and local policy and practice in low-income countries. This paper will describe one response to this gap in attention, the Tanzania girl's puberty book project, which was developed through participatory research conducted with Tanzanian girls in 2006-2007. An initial pilot distribution and evaluation of the girl's book was followed by sustained efforts with local stakeholders that led to the girl's puberty book being integrated into government level policy in education and WASH in schools, and over 140,000 copies being disseminated. The Tanzania girl's puberty book project has implications for girls' health and education policy across low-income countries, and is being adapted for Ghana, with plans for developing an Ethiopia book in 2012.

Keywords: *puberty, adolescence, girls, menstruation, education*

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The onset of puberty, and specifically menstruation, is an opportune moment for reaching girls as they transition into adolescence and young womanhood. To date, the reproductive health community working in low resource countries has primarily focused its efforts on critical aspects of improving reproductive health outcomes - contraceptive use, family planning, prenatal care, prevention of anemia, and safe labor and delivery.^{1,2} The HIV/AIDS community, in turn, has attempted to reach girls who are at risk for HIV infection through life skills training in schools and other activities focused on safe sex, usually targeted at girls in later adolescence.^{3,4}

In contrast, the changes of early puberty have tended to be overlooked, with the moment of menarche and overall transition through early puberty representing a missed opportunity for reaching girls as their internal (physiological/emotional) and external (family/community) lives begin to change. For girls in low-income countries, the onset of menses and puberty may bring with them significant social and cultural pressures to leave school, to take on more household responsibilities, to be readied for marriage, and to navigate new sexual pressures.^{5,6} The pubertal transition period can also be a time when negative shifts occur in a girl's sense of her own empowerment and self-esteem.⁷

Given the numerous health-related risks faced by adolescent girls and women in low-income countries, such as infection with HIV/AIDS, unsafe abortions, and gender-based violence, attention to policy and programming that aim to ensure that girls transition through puberty with a healthy body and a sense of empowerment over that body is an important component of ensuring improved population health. This article describes one such effort to fill this gap in attention to girls' pubertal experience – the “Girl's Puberty Book Project” in Tanzania. The project utilized an interdisciplinary approach of public health and education to convey and convert girls' recommendations about their puberty information needs (collected through a comparative case study conducted in rural and urban Tanzania) into practice (a girl's puberty book for 10-14 year olds) and, ultimately, government policy. The implications are significant for other low-income countries focused on improving girls' and women's health.

The Onset of Puberty

The arrival of puberty brings with it significant physiological changes, as well as social and cultural pressures, for girls growing up in Tanzania, across sub-Saharan Africa and in other low-income regions today.^{8,9} The transition through pubertal changes – both the visible aspects of maturation, such as hip widening and breast development, and internal and oftentimes confusing emotional changes – introduces new challenges for girls in societies where traditional puberty guidance and practices may be diminishing as modern globalizing influences seep into daily life.^{10,11}

In particular, the onset of menstruation, and the need for bodily self-management around menstrual blood flow in the private (household) and public (market, school) spheres, requires a natural but new set of behaviors from girls.¹²⁻¹⁴ Also relevant to the pubertal transition are the demands of menstrual-related self-management for girls who attend school – a group that is increasing due to the narrowing of the gender gap in education in many sub-Saharan African countries and other low-income regions.^{15,16} Today increasing numbers of girls are enrolled in primary school (and secondary school in some countries), where they are transitioning through puberty in the close company of boys and men and therefore experiencing a more public or coed pubertal transition than prior generations of girls may have experienced.

This narrowing of the educational gender gap represents an important step towards diminishing gender inequality in schools and society. There remains, however, an urgent need to address the sexual and social maturation experiences of girls, which includes ensuring that pubertal body changes, such as the need to manage menses in coed schools that lack sufficient water and sanitation facilities and have predominantly male teachers (as is the case in much of sub-Saharan Africa), do not hinder girls' academic advancements due to insufficient pubertal guidance and support.^{6,17} While the sexual and social maturation of boys also represents an untapped area of important research and intervention, the project discussed in this article was primarily focused on reinforcing girls' positive maturation experiences.

Adolescent Girls in the Tanzanian Context

In Tanzania today, girls transitioning through puberty into adolescence face a myriad of experiences, depending on the region in which they live, the

economic background of their family, and the ethnic background in which they were raised (with over 120 ethnic groups in the country). There exists data on national and local trends that assist the Tanzanian government and local practitioners in addressing some of the priority health- and education-related challenges perceived to be experienced by girls across the country.¹⁸

Health-related challenges include adolescent girls (aged 15-19 years) being extremely vulnerable to infection with HIV, with girls more than six times as likely to become infected as same-aged boys,¹⁹ and adolescent girls' high risk of morbidity and mortality from unwanted pregnancy due to subsequent unsafe abortions, more risky pregnancies when their bodies are insufficiently mature, or their inability to access appropriate antenatal care and emergency obstetric care when needed.²⁰ In addition, there are social and cultural pressures on girls and young women to support their families as they mature into adolescence by: taking on increasing amounts of household chores and other domestic activities; assisting with caretaking and income-generating activities; and conducting a host of other gender-specific tasks that infringe upon girls' school participation and academic success. Although not all girls across Tanzania face such challenges, there are sufficient numbers of girls confronting health and education-related obstacles that efforts aimed at keeping girls in school, and helping them to understand and feel in control of their maturing bodies, are extremely important.

Tanzania itself is a country under transition, with increasing influences of globalization, urban migration and the impact of HIV and AIDS shifting the traditional extended family structure.²¹ The country receives a significant amount of support from global donors (bilateral and multilateral), while also developing its tourist industry and investing in other forms of economic development. Tanzania, like other sub-Saharan African countries, has a growing youth population, with increasing numbers of girls (and boys) attending school, and a subsequent narrowing of the gender gap in schooling, particularly at the primary school level. However, as girls reach the end of primary and students make the transition to secondary school, there is a large drop-off in enrollment. While an estimated 90% of girls are enrolled in primary school in Tanzania (73% attendance rate), only 5% are enrolled at the secondary level.²² Other education-related challenges include school drop-out among girls who become pregnant, particularly in select regions of the country, and sexual harassment of girls as they travel to/from

school and sometimes in the school environment itself. The Ministry of Education has persisted in trying to revise certain policies that are perceived to discriminate against girls, such as those that force girls who become pregnant to leave school; to date, however, such policies have not been revised. The government has verbally maintained a strong commitment to both improving access to schooling across the country, and to narrowing the gender gap in education. In addition there exist strategies that address challenges around water and sanitation facilities that children face in the school environment, and adolescent health policies aimed at addressing the priority health challenges facing girls. Overlooked however, as in many sub-Saharan countries, is focused attention on early puberty.

The Girl's Puberty Book

The girl's puberty book was developed and published in Tanzania with the intention of complementing a larger national push towards ensuring girls' healthy transitions to young adulthood. As education systems across sub-Saharan Africa aim to reduce the predominance of male teachers and administration (so girls will have more female role models and advice) and improve water and sanitation facilities in schools (which continue to be severely lacking in many countries but are essential for girls' menstrual hygiene management) when attending school, the girl's puberty book provides a critical interim step towards improving girls' comfort levels around managing pubertal body changes in frequently girl-unfriendly school environments.^{23,24} As will be discussed, and as was demonstrated in Tanzania, the girl's puberty book also provides an entry point for parental and teacher-led discussions with young girls about reproduction and body change, reaching an important window in young people's lives before the onset of sexual activity.

The girl's puberty book project, as demonstrated in Figure 1, was developed through a three-phase process: In Phase I, an in-depth comparative case study was conducted on girls' experiences of menstruation and schooling, which utilized participatory activities with girls and collected information critical for the content of the girl's book. As cited articles provide details on the study, including the theoretical framework guiding the research process and interpretation of the findings, this article will not provide extensive background on the methodology and findings.^{14,25} In Phase II, the author focused on continued stakeholder building and the book's development. Phase III then included dissemination, evaluation of the book, and advocacy

for local policy change and sustainable financing in Tanzania. This article primarily discusses Phases II and III of the book project, while highlighting key components of Phase I (the research). The latter is currently being adapted and simplified for the purpose of developing girl's puberty books in new countries (Ghana and Ethiopia) in 2011 and 2012, respectively.

Project Background

The girl's puberty book was developed out of the findings from a nine-month in-depth comparative case study conducted by the author in rural and urban Tanzania from 2006-2007 (Phase I).^{14,25} The aim of the overarching study was to explore girls' experiences of menstruation, puberty, and schooling and how the onset of menses might be interrupting girls' abilities to participate successfully in school. The study utilized a mixed-methods design to capture girls' voices and the views of the adults who are interacting in girls' daily lives (e.g. teachers, parents/guardians, health workers).

The research methodologies included: ethnographic observation (e.g. of classroom gender dynamics, of school water and sanitation facilities, of student-teacher and student peer interaction); archival document review (e.g. of primary and secondary school curricula, of attendance records, of health and education policies); key informant interviews with adults (n=4-5 per site); in-depth interviews with adolescent girls (n=8 per site); and participatory activities with groups of girls in and out of school (n=4 groups per site). The research was intentionally conducted with older adolescent girls (aged 16-19 years), knowing the recall would not be too distant (many girls do not reach menarche until aged 14-15), and assuming that older girls would be better able to reflect on the pubertal transition experience, and would also likely feel less discomfort than younger girls with sharing their experiences and advice for girls yet to reach puberty. The sample of girls was recruited in collaboration with school administrators and the directors of local vocational training centers (for the out-of-school girls). Adults for the key informant interviews were also recruited through discussions with school administrators and local colleagues in each of the research sites. Demographic details on the sample background (e.g. ethnic groups, diversity of economic and social backgrounds) are described elsewhere.^{14,25}

Participatory approaches, which emphasize an equalizing and dynamic exchange between researcher

and participants, were utilized to enable the researchers to gather sensitive information while simultaneously empowering girls.^{26,27} For the participatory activities, the research team (the author and a Tanzanian woman who served as the research assistant) met with adolescent girls in and out of school. The research team gathered groups of girls (n = 10-20 girls per group) at each of the sites once a week for four weeks. The groups were separated into different grade levels for those girls in school (Form 2, Form 3, and Form 4 of secondary school), with an additional group that included out-of-school girls recruited from a vocational training center.

The weekly meetings with the groups of girls (four meetings were conducted with each group in total) took place in a private setting so that girls would feel comfortable sharing their growing-up insights. The in-school girls met at the end of the school day in an empty classroom after all other students had departed for the day to ensure confidentiality. The out-of-school girls met at a similarly private location. Informed consent was requested prior to the start of all the participatory activities, and the research team discussed with the girls the importance of keeping the conversation and insights shared by their fellow participants confidential.¹⁴ Although all of the research methodologies proved informative, the participatory activities provided the most useful information for the subsequent content development of the girl's puberty book.

The study was conducted in both a rural and an urban setting in Tanzania so as to capture differences that may exist in: the practice of traditional ceremonies or the guidance that is conveyed around puberty; menstrual meanings and related behaviors; economic and environmental aspects of daily life that impact girls' growing-up experiences, including social or cultural pressures that may arise at this age; and lastly, influences from globalization that may (or may not) be shaping the transition through pubertal onset. Additional details on the study methodology and data analysis are not included due to space limitations but can be found in other publications.^{14,25} The inclusion of girls in both urban and rural areas was critical given the differing social, cultural, and economic contexts in which they lived and went to school.

Overarching Key Findings

The comparative case study revealed a significant gap in girls' knowledge about the pragmatics of menstrual management and pubertal body change. Many girls (as evidenced by stories they wrote about their first menstrual experiences) mentioned feeling

panic at the sight of their first bleeding, thinking they had a terrible disease that might mean they were dying, or that they had behaved badly in some way.¹⁴ Although some girls sought out guidance from elder sisters, aunts and occasionally a mother, many girls were fearful of telling anyone about the onset of their menses, feeling a deep shame at the arrival of the blood (having not received prior guidance), and even afraid they might be punished if their mothers thought they had been misbehaving (interpreted as engaging in sexual relations).

While a few teachers were supportive, the majority were not consulted by girls, and in the rural area in particular, primary teachers were found to be warning girls that their mothers might die if they told them about their first menses.²⁵ The research team's interpretation of the latter, from consultation with senior gender and health experts in Tanzania, was that such a belief might stem from perceived cultural linkages between menarche and sexuality, and traditional taboos that parents are not to discuss sexuality-related matters with their daughters – a role intentionally given to paternal aunts in Tanzania. Hence the teachers may have been trying to guide girls towards their aunts. The challenge faced by the girls in the study was that due to the changing nature of Tanzanian society, many aunts (and grandmothers) were no longer living nearby, which created a void in girls' lives in terms of sources of growing-up guidance.

The fieldwork also revealed the structural challenges faced by girls in primary and secondary schools, including inadequate latrines (e.g. insufficient numbers, unclean, not private), water supplies, and disposal systems for handling and disposing of used sanitary materials and, though not universal, a prevalence of teachers and school administrators who were uninformed about the unique needs of newly menstruating girls and frequently male.²⁵ As mentioned, contributing to the challenges faced by girls in managing menses successfully in schools was the taboo nature of the topic and the secrecy surrounding any mention of it – a familiar experience for newly menstruating girls in many regions of the world. This taboo was found to hinder those teachers who wanted to be supportive and actively assist newly menstruating girls in school.

A key aspect of the study approach was the continued stakeholder building from its start through to its end. Over the course of the nine months of fieldwork and analysis, advice and input were consistently sought from Tanzanian experts in gender, health and education, including: colleagues from the University

of Dar es Salaam, the Ministry of Education, and local women's groups; former directors of large girls' education projects funded by the World Bank and other international donors United Nations organizations, and other similar colleagues. This group of senior Tanzanian policymakers, practitioners and researchers proved to be an essential source of guidance and support for the later development of the girl's puberty book and its subsequent integration into national policy.

The Contribution of the Participatory Activities to the Girl's Book Content

Although much of the comparative case study data was useful for the subsequent development of the girl's book, selected research activities from the groups (including individual writing assignments) provided the primary content of the book and are important to highlight here. A subset of the participatory activities conducted with girls was of particular relevance (see Figure 2). The most important activities for the development of the girl's book included: One, all of the participating girls wrote (anonymously) for homework a "menstrual story," which aimed to capture the details of their first menstrual experience and their growing-up guidance for younger girls. Girls were asked to describe how they felt at their first menstruation, who they sought for advice (or if they sought no one), how they physically managed their first menstruation, and what their specific advice was for younger girls yet to reach menarche.¹⁴ Two, girls were asked to submit (anonymously) the puberty questions for which they wanted answers, an activity that highlighted the gaps in their current knowledge about menstruation and puberty, and those topics about which they were interested in learning more information.¹⁴ Three, girls worked in groups to design a 'puberty curriculum' that the researchers could subsequently recommend to the Ministry of Tanzania, thereby highlighting what girls felt was important to learn during puberty.¹⁴ Four, interested girls were asked to draw the 'perfect girl's toilet' for school settings, an activity that highlighted girls' recommendations for water inside the latrine (not adjacent to it) and the need for incinerators close to the latrine facility (so that girls wouldn't have to be embarrassed in front of boys as they carry full dustbins/buckets across school grounds for burning) (Figure 3).²⁸ Additional participatory activities were conducted, however the above provided the most substantive data for the content of the girl's book.

Also essential for the development of the book's content were reports and documents collected during

the study and, in particular, a puberty curriculum that was being developed by the Tanzanian Ministry of Education. Utilizing the latter was critical for decisions on what puberty information should be incorporated into the girl's book because it ensured that the information to be provided to girls would be consistent with what the government was already planning to include in the school-based curriculum. The aim would subsequently be to adapt the content to a reading and cognitive comprehension level appropriate for girls in the final years of primary school.

It is important to note that, given the research team (during the comparative case study fieldwork) had an existing vision of creating a girl's book in the future, the team requested permission from all the participating girls to utilize the information gathered (and in particular the menstrual stories) in a future book to be published for Tanzanian girls. This included asking girls for recommendations on how best to distribute such books to girls, given the challenges of reaching 10-14-year-olds (the targeted age range), who may be limited in their movement outside of the household and school settings.

Development of the Girl's Book

After the completion of the study, researchers applied for and received a seed grant from the Nike Foundation (in November 2008) for the development and publication of an initial 16,000 copies of the girl's puberty book (Phase II). A series of steps, described below, were then taken to develop the book's content.

First, an informal 'book committee' was formed that included Tanzanian gender and education experts, including colleagues at the Ministry of Education, school teachers and administrative staff (both men and women), Tanzanian and expatriate colleagues at non-governmental organizations (NGOs) working with girls, and the author's former research assistant from the comparative case study. The committee was asked to assist in a review of the draft book content as it was refined and developed over a period of months. Members were asked to provide honest feedback on the appropriateness of the content, such as its cultural and social acceptability, on the best approaches for reaching girls with the books, and on assuring parental/guardian comfort with its content. Given the busy schedules (and different geographical locations) of most of the book committee's members, meetings to review the book's content were

conducted individually or input was sought input electronically.

Second, we developed, in collaboration with Tanzanian colleagues and former Peace Corps Volunteers who had taught in the primary schools in Tanzania, an outline of the book's content. The content was based on the prior research findings and the draft puberty curriculum mentioned above. The book contains three sections: the first part includes basic puberty and menstrual management guidance; the second part contains a selection (five) of the girl's menstrual stories; and the third part contains activities that were designed to provide girls with answers to the many puberty questions they had asked. A PDF file of the book is available online for downloading (www.growandknow.org, "publications" link). The book was outlined in English (except for the menstrual story section) prior to identifying a Tanzanian translator to incorporate the Swahili. The book was to be bi-lingual, with English and Swahili on each page – Swahili to ensure that the girls would understand the content and English because it is the primary language of school instruction at the secondary school level.

Third, the author traveled to Tanzania in January 2009 to identify and hire an illustrator, a translator, and a publishing company. Recommendations were sought from local colleagues in Tanzania, and after numerous meetings, a review of pictorial samples (illustrations), and a price comparison of the illustrators, translators, and publishing companies available, all were hired. A key consideration of the hiring decision was finding collaborators who took the time to envision the book and had suggestions about how best to capture girls' interest in reading it. A timeline was established with the illustrator, translator and publisher to ensure that the book would be ready for field testing by May 2009 and for distribution and evaluation in August 2009.

Two additional aspects of the January 2009 trip were critical for the book's development and should be noted here: One, the author met with the members of the book committee to review the proposed content of the book and to receive editing suggestions. Second, the author visited with numerous NGOs, both secular and religious, with relevant Tanzanian women's groups (e.g. FAWA), and with various international organizations and donors (UNICEF, UNFPA, the World Bank, USAID). The purpose of these meetings was two-fold: the NGOs were identified as the best approach for disseminating the initial 16,000 copies in a way that would allow for the collection of process evaluation data, and the

international organizations and donors had been identified as appropriate future partners that could ensure the book's sustainability.

Fourth, the author received (electronically) draft proofs of the girl's book illustrations and translations over the course of February – April 2009 and provided feedback to the collaborators as they progressed in finalizing the book's content. A final proof of the book had been completed by May 2009, when the author returned to Tanzania to conduct a field testing with girls, parents and teachers, in collaboration with colleagues from the Ministry of Education. The May trip included another series of meetings with key stakeholders, including the members of the book committee, to ensure their continued input into the book's content.

Field Testing of the Girl's Book

A field testing of the content with girls was a critical component of the book's development. Having the book well grounded in the local context, with illustrations and content that would be satisfactory to parents and teachers, and most importantly, appealing to the target age range of girls (10-14 years old) and aimed at the appropriate reading level, was essential. In collaboration with local colleagues from the Ministry of Education, the author identified an appropriate primary school on the outskirts of Dar es Salaam for the field testing. This school had a range of students from different ethnic and economic backgrounds and was therefore deemed appropriate for gaining diverse insights into the book's draft content. The author, the translator, and a Tanzanian colleague from the Ministry of Education identified a private room on the school grounds and spent three hours meeting with a selection of 11-12 year old girls (in Standards 5-7, which are the final years of primary school). The group went page by page, discussing the various illustrations, use of Swahili language, and overall clarity of the book's content and meaningfulness for girls of this age. The girls provided essential feedback on which illustrations worked, which did not appear to match the language or content of a page, which were appealing and which were not. For example, the girls noted that the illustrations depicted girls who had not yet started physically maturing (i.e. an absence of breasts) and requested that the illustrations be modified accordingly. The input from girls was extremely important, both in making edits to the English and Swahili text and to the illustrations themselves.

The girls participating in the field testing were also asked, at the end of the session, to write anonymously

their perspectives on the book. A selection of their responses (translated from Swahili) included:

"I ask that this book be distributed in schools, even in villages. If they [girls] don't know anything about having their first period, this book will help a lot. Another person who has her period may be afraid to explain this to her mother, sister, aunt and grandmother, but she will be able to read this book and read a lot."

"This book will help to motivate us. Also, teachers should be given these books in order to teach students in more depth without fear or shame. Students can pass the books to their friends."

"I learned about puberty. If I get my day of menstruation [menarche], I will be able to tell my mother."

"My advice is that these books be distributed, especially to villages in Kigoma and all regions, and if possible, in all of East Africa. Give the books to the children themselves, not to the teachers, because there are many teachers who will not give them to the children."

The team subsequently met with teachers from the school, also in a private location, to review the content and ensure that adults working with primary school girls felt that the information in the book would be appropriate for girls and satisfactory to parents when the girls took the books home from school. Separate meetings were also conducted, as mentioned above, with the members of the book committee. All of the suggested edits were then provided to the illustrator and translator for corrections to be made prior to the planned dissemination of the final book in August.

Evaluation and Dissemination

Process Evaluation and Distribution of Initial Copies

As mentioned, the aim was to use the distribution of the Nike-funded copies as a pilot to determine the best approach for dissemination, while also building local interest in supporting future publication of the book. Integrating a process evaluation into the dissemination of the initial 16,000 copies was crucial for ensuring that feedback was gathered from girls, parents, and teachers across Tanzania on the book's content and uptake. Process evaluation forms were

distributed to the various NGOs who participated in the book's distribution; forms were to be filled out by the overall supervisor of the distribution at each NGO and by the participating teachers or field staff members who were doing the actual distribution in the various schools and other programs with girls.

The aim of the process evaluation was to track the uptake of the girl's book, to identify more/less successful mechanisms for distributing it, and most importantly, to receive feedback from regional areas on the response to the book. Over half of the participating NGOs returned detailed evaluation forms with very useful insights, including the very positive response to the book in the various local contexts across Tanzania, the comfort level of parents with the book, and interestingly, a request from a number of teachers/field staff to develop a similar book for boys. One of the main arguments for the boy's book is to begin to lay the foundation for improved gender relations between girls and boys in Tanzania, along with the overall need for boys to also understand more about their changing bodies. The feedback also recommended that the book be distributed broadly across Tanzania.

Additional tracking of the book's uptake across Tanzania is continuing, with a modified form being developed for the additional 124,000 copies of the book that have now been published with support from UNICEF and UNFPA (discussed below).

Outcome Evaluation

An outcome evaluation was conducted in August 2009 which included a pre-post test survey with girls in Standards 5, 6 and 7 at two primary schools (peri-urban and rural) and girls in Form 1 at one secondary school (see Figure 5 for school level explanation). The survey was conducted in Swahili and contained both multiple choice questions (closed-ended) and, for the Form 1 level girls, open-ended questions. All surveys were conducted anonymously, and coding was used to differentiate age, school level and location. The findings from the open-ended questions provided the most insight into the book's impact given the younger girls experienced difficulty in responding to closed-ended questions, as it was the first time any of them had been exposed to such surveys. In addition, the sample proved too small to demonstrate significance, so the team concluded that the qualitative findings would be most useful for the analysis. The quantitative data will therefore not be reported (though a modified and simpler pre-post test survey with a larger sample of girls is currently being planned). Overall, there was an extremely positive

response to the book. Illustrative examples of girls' written responses to the open-ended questions are provided below:

Question #1: Did you find this book useful? Why or why not?

"The book helps a girl to understand her body."

"Yes, it has a lot of importance because when you are in your MP [period], you don't know whom to go to for advice or to help you, so I have learned and am happy about the book."

"Yes, this book has advantages for me because I can now explain what is in the book to other girls who haven't gotten their MP [period] yet when they get their first MP, they don't have to be afraid or scared of the blood, as the book helped me not to be scared when I miss my MP in a month."

Question #2: What did you find interesting about this book?

"[The book] helps a student to educate her fellow students about carrying a kanga [cloth wrap], and a pad, so as to help herself and others."

"Many things about my physical growth, hygiene during my MP [period], and how to keep myself safe [not having sex] in my body."

"It educated me on how the girls get their MPs [periods] when they are in school, and how to take care of yourself so you don't get stains on the back of your dress, and to keep an extra pad in my schoolbag."

"It gave me the courage of how to talk about this with parents and guardians when you get your MP [period]."

Question #3: Who would you recommend reads this book?

"All girls, especially those who have not reached puberty."

"Teachers or other parents in our communities."

"All girls from 10-25 need to read because some are adults but do not know how to take care of themselves and their cleanliness during their MP [period]."

Question #4: Is there anything else you would like to tell us about this book?

"This book is really good especially for us girls so that we know how to keep clean even if we are in class and also if our MP [period] starts, we know what to do."

"I advise other girls that when they think they are all grown up, and they shouldn't think they know everything, they have to read this book so they can change in one way or another, because when you think you know everything, something embarrassing may happen to you, some small thing."

"I would like to recommend that you write more on things that lead a girl to fall into temptations [sex]."

The feedback received from the girls was extremely informative about the usefulness and appropriateness of the girl's puberty book. Although the survey sample was small, the findings pointed to an increased level of knowledge and a shift in girls' attitudes towards puberty and menstruation. It is important to note that large-scale changes in girls' behavior, such as an increased school attendance during menstruation, were not expected from the outcome evaluation given that improving girls' knowledge and comfort level with managing menstruation in school is only one component of the holistic response needed to make schools more girl-friendly. The community, government, and donors must respond by building appropriate and private water and sanitation facilities and by sensitizing teachers and school administrators to girls' particular needs.

Uptake and Sustainability

The local response to the girl's puberty book has been extremely strong. After reviewing a copy of the girl's book (Figure 4), the Permanent Secretary of the Ministry of Education asked that the book be submitted to the Ministry's curriculum committee (EMAC) for approval. In November 2009, the girl's book received preliminary approval from EMAC for

use in primary schools, with final approval received in August 2010.

Having received Ministry buy-in, the local United Nations' organizations became interested in supporting the book; UNFPA funded an additional 42,000 copies in December 2009, and UNICEF followed suit with the publication of 42,000 copies in April 2010 and another 40,000 copies in March 2011. The total number of published copies in Tanzania has now reached 140,000. Numerous local grassroots NGOs and larger international NGOs have requested copies for distribution through their projects reaching 10-14 year old girls, and book and tracking forms have been provided to all of them. Most recently, the large mobile phone company Vodacom committed to supporting the publication of another 50-100,000 copies of the girl's book, and it will distribute the books through its distribution network across Tanzania.

Important indicators of the book's future sustainability include inquiries that have come in to the book's publisher from local retailers asking to purchase bulk copies of the book for resale and local businesses interested in supporting additional copies. In addition, UNICEF/Tanzania is aiming to raise sufficient funds so that all 1.5 – 3 million girls within the target age range of 10-14 years in Tanzania have their own copies.

There has also been global recognition of the untapped niche the girl's puberty book has filled in projects reaching adolescent girls and young women across the low and middle-income world. In response to the girl's book's success in Tanzania, which demonstrated the great demand for responding to girls' menstruation and puberty needs in school, UNICEF Headquarters in New York City asked the author to conduct a webinar for UNICEF offices globally for those country offices that might also be interested in developing a girl's puberty book. The webinar was conducted twice in April 2009, with participants logging on from offices in a range of regions, including Nepal, the Maldives, Pakistan, Uganda, and West Africa.

In 2011, water and sanitation practitioners from Zimbabwe have contacted the author about modifying the book to the Zimbabwe context, and colleagues at Save the Children working in Nepal will be commencing participatory research with girls in 2011 to adapt the book to the Nepali context. The author is working with colleagues in Ghana to adapt the girl's book to the local context and, in late 2011, will collaborate with colleagues in Ethiopia to

develop and adapt the girl's book to that local context.

Integration into Tanzanian Policy

The girl's puberty book has been incorporated into national level policy in two fundamental ways. As mentioned, the government of Tanzania has for some time demonstrated a commitment to narrowing the gender gap in education and addressing the specific health needs of adolescents. Although before the development of the girl's book there was no specific mention of menstrual hygiene management or attention to puberty in national level policy, there were amendments to various strategies that tried to emphasize the importance of, for example, having a private room at the school level for girls experiencing menstrual discomfort to rest, and for attention to the needs of adolescent girls who might experience increased sexual pressures. The integration of the girl's puberty book into two different aspects of national-level policy has been a natural fit and was the result of continuous stakeholder-building throughout the book's research and development process, as well as local recognition of the need to fill this overlooked gap in attention to puberty and menstrual management.

First, the approval by EMAC (the Ministry of Education curriculum committee) of the girl's puberty book for use in primary schools was a great accomplishment. While the existing school curriculum did include lessons on reproduction at both the primary and secondary school levels, the curricula lacked pragmatic guidance for girls on how to manage their menses and how to feel comfortable with the emotional and physiological changes of puberty. Identifying funding to support the effort ensure that all 10-14 year old girls receive a copy of the book (entitled "Vipindi Vya Maisha" or "Growth and Changes") is the current challenge.

Second, through the continuous stakeholder building with UNICEF and local ministry officials, the girl's book was incorporated into one of the toolkits of the new WASH in Schools national strategy being rolled out across Tanzania in 2011. The strategy is the result of a collaboration between four different ministries in Tanzania (health, education, water, sanitation) and includes integration of menstrual hygiene management interventions (e.g. sufficient latrines, water, disposal mechanisms for used sanitary materials) along with the girl's book itself. The author is currently collaborating with UNICEF and TWESA (a local NGO) to develop teacher training

materials for the girl's book to be included in the toolkit upon its finalization.

Discussion and Policy Implications

The overarching key finding from the girl's puberty book project is that the book has tapped into an unmet need (guiding girls through the onset of puberty) in Tanzania – a gap that appears to exist in countries across sub-Saharan Africa, South Asia, and other low-income regions of the world. The importance of filling this significant gap in the current policy and programming on reproductive health and HIV cannot be emphasized enough. The implications for pubescent girls are critically important given the significant changes in expectations around their behaviors and futures that frequently emerge after the arrival of puberty. It is essential that girls are empowered to take care of their changing bodies. This effort that can be realized in part by better informing them about their changing bodies, the confusing nature of the physical and emotional changes of puberty, and the encouragement that can be offered from older adolescent girls who have successfully navigated this important life event.

Additional key findings from the process and outcome evaluation included the following important insights: *One*, girls' strong enthusiasm for teaching other girls (such as younger girls, fellow students, and girls out of school) about the changes of puberty so they will not be afraid upon finding blood the first time, and will feel empowered through knowing how to manage their menstrual flow suggests the great potential for building or strengthening social networks between girls. *Two*, girls' strong recommendation that the girl's book be shared with mothers, aunts, sisters, grandmothers, and teachers so they will be better informed to teach girls about the changes in their bodies and menstrual management further supports the findings from the original research that many girls are receiving inadequate information/guidance from elder girls and women. *Three*, girls' interest in additional books being developed that help them to address and manage sexual pressures and other challenges of later adolescence reinforces the findings from the original research that girls are receiving insufficient guidance on how to navigate sexual pressures of adolescence and also supports the model of a book with actual girls' stories as a potential new successful mechanism for empowering girls. *Four*, the strong support received from the Ministry of Education points to a critical gap in pubertal guidance that the book is filling, and to its success in capturing the local

cultural and social context through its presentation and contents. *Lastly*, strong interest from parents and teachers for the development of a similar book for boys, which would both teach boys about the changes of puberty and promote among boys the need for better treatment (and respect) of girls and women, underscores the importance of enhancing projects aimed at empowering girls to include boys, recognizing the gender dynamic within countries, and acknowledging the impossibility of truly improving girls' lives without also engaging with the social norms being conveyed to boys.

Although other book projects exist in many countries, including Tanzania, most of the books (or magazines) published for young people in Tanzania (FEMA, FEMINA) have been aimed at an older age group, and/or have utilized cartoon drawings, or been aimed at a higher reading level. The FEMA books, however, have widespread distribution across the country and are very popular. Another NGO, GTZ, has published handbooks aimed at older adolescents that discuss use of drugs and alcohol, safe sex and HIV, depression and mental health, and other important topics.

The GTZ books, however, have not to date been approved by the Ministry of Education, possibly because they take on more risqué topics than the girl's puberty book. In other countries, such as Sierra Leone and India, UNICEF has supported the development and publication of books aimed at teaching girls about menstruation and the changes of puberty, though the books appear to be aimed at a higher reading level (including more detailed guidance and fewer illustrations) than the Tanzania puberty book. Other NGOs, such as Room to Read, have large programs in numerous Asian (and increasingly African) countries focused on publishing local language books. These books are very colorful and successful, though developed through a different approach (e.g. contests for local authors are conducted). The author is unaware if Room to Read has attempted to have books approved by local Ministries of Education.

All of these examples are exciting efforts to inform young people about important topics and also help to build a culture of reading across these countries. Such examples may prove useful to health education practitioners who are exploring new approaches to reaching young people and educating them, regardless of where they live across the country – even in the most rural locales that may lack a school library or other source of resource materials for young people, their teachers, and their parents.

Conclusion

The most important message to be conveyed to policymakers working in the arena of girls' health, girls' education and women's health from the example of the Tanzania girl's puberty book project is how the process of the book's development and dissemination, one that incorporated the channeling of girls' own stories and questions into a book capturing their voices, led to both its subsequent uptake among girls, parents and teachers across the country and recognition of its contextual relevance and topical importance by the government of Tanzania through its integration of the girl's book into educational curriculum and policy.

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Figure 1: The path from research to policy of the girl's book project in Tanzania

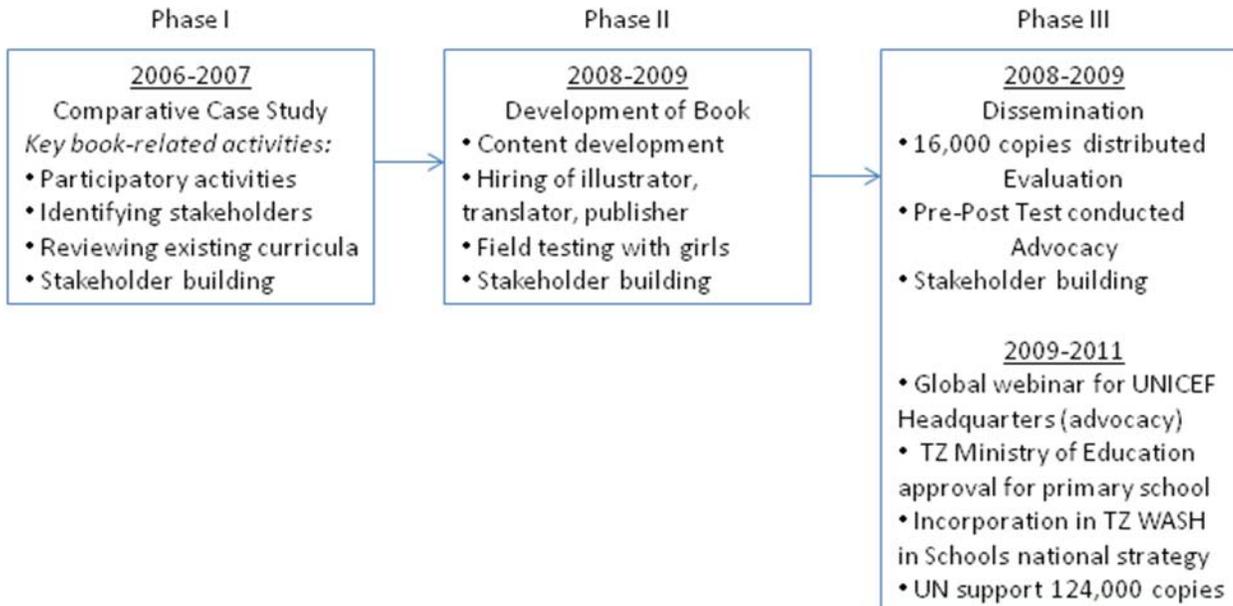


Figure 2: Participatory activities providing content for the girl's book

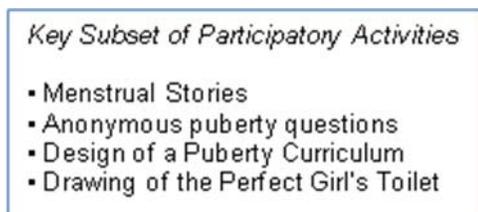


Figure 3: Example of a drawing done by participant of the “perfect girl’s toilet”

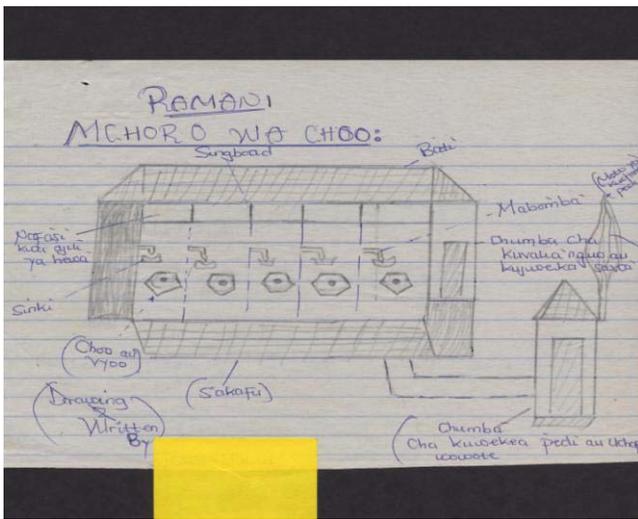


Figure 4: Examples of pages from the girl’s puberty book

What are the physical changes that take place in girls?

A girl's breasts start to grow and her hips get rounder. Hair starts to grow under her arms. Hair grows between her legs. She starts to menstruate (have periods or her "M.P." monthly period).



Ni mabadiliko gani mwilini mwa msichana?

Maziwa ya msichana huanza kukua na mifupa ya nyonga zake hutanuka. Nywele huanza kuota kwenye makwapa yake na nywele nyingine huota sehemu zake za siri.

Na hapo msichana huvunja ungo na kuanza kupata hedhi. Huanza kuingia kwenye siku zake (kuingia mwezini, kupata "M.P.").

What is menstruation?

Menstruation means that a girl's body is growing up, and is preparing for the future when she might get pregnant and have a baby.

During menstruation, the lining of the uterus comes out along with blood through the vagina. Bleeding usually lasts 4-7 days (but can last longer) and usually happens every month.

Monthly bleeding is not something to be scared of, because it is perfectly normal.

Hedhi ni nini?

Kuvunja ungo na kuanza kupata hedhi (siku zake) ni dalili kwamba mwili wa msichana umekua na unajaandaa kwa miaka ya baadaye ambapo anaweza kupata mimba na kuzaa mtoto.

Wakti wa hedhi, kuta za nyumba ya uzazi (uterasi) hubomoka na kutoka nje pamoja na damu kupitia uke wake.

Kutokwa damu hudumu kwa siku 4 – 7 (japo yaweza kuendelea zaidi) kwa kawaida hutokea kila mwezi.

Usiwe na wasi wasi unapotokwa damu kila mwezi maana ni jambo la kawaida, ndio maumbile ya kila msichana.



Figure 5: School Levels in Tanzania System

Primary School	Standards 1-7
Secondary School (O-Levels) (A-Levels)	Forms 1-4 Forms 5-6