

The difficulties of ‘living while girl’

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Abstract

In this Viewpoint, Judith Bruce answers questions from *Journal of Virus Eradication* Editor, Sabine Kinloch-de Loës, on the importance of fulfilling the basic human rights of adolescent girls and their relationship with viral epidemics such as HIV. Judith Bruce is a graduate of Harvard University and a Senior Associate and Policy Analyst at the Population Council, New York, USA, whose work is aimed at building the health, social and cognitive assets of girls in the poorest communities in the developing world.

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Judith, you have written, talked and campaigned for years on girls and adolescent girls in terms of their basic human rights. A momentum is building in terms of understanding the importance to address this issue. If we consider the 1.2 billion adolescents – 600 million adolescent girls among them in the developing world – could you elaborate on how their health is affected by violations of their human rights?

The poorest girls in the poorest communities – the 200 million poorest girls, that is the bottom one-third in the developing countries – are deeply affected by, and mediate scarcity [1]. If a 12-year-old girl is unwell, the roots are likely to be social factors such as not getting a fair share of food, overwork, and physical and sexual exploitation.

If a 12-year-old girl’s body was ‘her own’ (‘her own’ in the same way a boy of 12 owns his body) and being properly supported, there would be much reduced health issues for her. (Ask a 12-year-old boy whether he would like to be a 12-year-old girl – his answer could be illuminating.)

At the present time, many of these girls are already ‘living in an emergency’ [1] and represent the ‘credit card’ and safety net for many families. Their childhood is truncated and their adolescence appropriated; they are taken out of school to take on domestic survival tasks and productive chores, and/or married at a young age in return for economic and material returns to parents and ‘partners.’

In Niger, I was recently told that girls were being married just before the labour migration season. The marriage/migration market adds an extra pair of hands and grants sexual access – often to a much older man – under an exploitative one-way contract culturally defined as ‘marriage,’ accompanied by economic exchanges among families (and sometimes as a pathway to consolidating intrafamily social power). In all of this, girls have no rights and are in effect commodified.

In some settings ‘marriage’ is promoted because of a desire for the girl to have many children (also a need of economic origin), but these settings are increasingly few. Fertility desires are falling around the world, perhaps not as rapidly as we would like [2]. Rather than motivated by high desired fertility, child marriage is increasingly motivated by families’ fear of missing ‘the market.’ This also has demographic dimensions: as fertility falls, however gently, the supply of younger girls may decline in relation to the men 10–15 years older than they are, thus actually creating a pressure for even younger marriages (or at least not the reverse) unless there is some kind of push back.

Recent work in Ethiopia by my own organisation [3], directly addressed the issue of market forces by creating incentives for the majority of girls in a given community to stay in school and join girls’ clubs, and had the effect of delaying marriage by 2 years (effectively from age 14 to 16).

This program was not a ‘health’ program *per se*, although there were certainly serious health concerns behind it (maternal and child mortality and child marriage in the context of HIV). Rather, it was an economic and social investment to reduce child marriage by understanding the structural drivers, in this case, poverty. Action became especially urgent because at the time we began the work there was a substantial HIV epidemic. Girls who were not sexually active were being forced into sexual activity through marriage, hence even the poorest communities began to understand that there was some link between child marriage and HIV. (Note this is not marriage *per se*. The correct word to describe this type of ‘marriage’ is ‘child,’ and not ‘early.’ ‘Early’ suggests a precocious transition. ‘Child’ makes it clear that this is non-consensual and an extreme human rights abuse. It should actually be called child sexual slavery.)

Ill health is rooted in girls’ lifecycle of betrayed human rights, social isolation and economic exclusion. Epidemics intensify these forces. Just before the onset of the Ebola crisis in October 2013 we (Population Council, Sierra Leone Adolescent Girls Network, UNFPA, BRAC, Restless Development and dynamic local NGOs) were working to establish girls’ clubs all over Sierra Leone. The data were already quite daunting [4]: if present trends continue, about 75% of adolescent girls in Sierra Leone would become single mothers in their reproductive lives, one-third by having a child on their own, and the other two-thirds through marital dissolution. Many of those original ‘marriages’ arose because of a pregnancy that was under the age of consent and therefore unconsented, or forced. This was the situation before the latest epidemic outbreak. Girls who did not finish school, which is the vast majority of them, had markedly fewer possibilities of income in an economy that is increasingly monetised. If 75% of adolescent girls will be single mothers at some point in their reproductive lives up to age 49 (and over half by 30), then there is likely to be a high proportion approaching or exceeding 75% of children in Sierra Leone who will have a sole economic sponsor (their mother) at a potentially crucial time, and for a long duration during their childhood.

Following the conclusion of the first cycle of the Ebola crisis (Ebola has returned but not nearly in the strength it was before), the estimate is that about 18,000 girls became pregnant who would not have become pregnant [5]. During the Ebola outbreak they were confined at home, not in school, both driving adolescent pregnancy rates. There was a rise in sexual exploitation and poverty, and food security-driven exchanges of sex for gifts or money, and

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the breakdown of even the marginal governance and security the girls had enjoyed (See Cherner Bah's interview with Judith Bruce during the height of the Ebola crisis [6]). Becoming pregnant as an adolescent (first time motherhood is already stressful) became absolutely terrifying when maternity care in Sierra Leone virtually vanished during the Ebola crisis. There was even, for a time, a 'no-touch' policy in maternity care, i.e. if delivering women went to a health service, members of staff were to 'encourage' but not touch them.

Post Ebola, the government decided to exclude visibly pregnant girls from school [7], contravening a most essential human right. This was a very poor decision. We modelled the results of this. If 18,000 girls now pregnant are not allowed to continue their education another 2 years [5], they are then set up for high fertility from several points of view: inability to negotiate with older more educated and powerful 'partners,' they have less human capital, and, without skills, face increasing dependence upon sexual exchanges for the survival of both themselves and their children, generating additional fertility, and a truly vicious cycle. We estimated that these 18,000 girls, beginning childbearing so young and disadvantaged, may have over 75,000 children in their lifetimes. In our model, the children of these mothers who were not allowed to continue school contrasted with those of girls who were allowed back into school for 2 years. They might have about one-quarter of the amount of income from the maternal side invested in them per child as the children of the mothers allowed to finish school (whose fertility would be lower/slower and with better income earning prospects). These girls will be in financial difficulties and may require not only unsafe forms of regular labour but continuing sexual exchanges in order to support their children, and their girls – at younger and younger ages, perhaps as young as 10, will be trapped in the same cycle.

If we now consider man-made disasters like violence or war, how do they particularly affect adolescent girls and what is the relationship with viral infections like HIV?

There is undoubtedly some interplay between resource deficits, climate change and conflict. Because of population density, some analysts believed that the events in Rwanda were partially explained by population-to-land density [8], which increased ethnic strife, driving a conflict rife with abuse of females. In a recent paper [1], we found references in Syria to droughts that accelerated the disintegration of that country. The diaspora of Syrian girls into Jordan, Lebanon, Turkey and Iraq has yielded some persuasive small-scale documentation and terrible stories. In some places there are estimates of one in three Syrian girls being 'married,' and girls themselves defining submission to marriage as a matter of loyalty to their families [9].

Returning to the context of Sierra Leone, with which I am most recently familiar, the civil war there was characterised not only by high levels of violence against females, but also laid the foundation for continuing violence. The demobilised rebels were granted immunity and economic reintegration. Small motorcycles (rather than jail sentences) were given as part of the peace-making reconciliation process. Thus, at least some of the people who gave boys 'brown brown' (a form of powdered cocaine mixed with smokeless gunpowder) and guns and who raped girls were now part of an army of low-cost transporters, the drivers of whom girls travelling to school may rely on (especially in difficult rainy seasons). When you ask girls in Sierra Leone 'Which men are you most afraid of?' they say it is these motorcycle drivers. While girls are exhorted to go to school, they receive little support for this and are held accountable (unlike male ex-rebels) for pregnancies or other conditions that are imposed upon them. A young girl going to school faces problems at home (the man living with her mother),

daily logistical problems (such as walking long distances in the early morning unaccompanied or taking a moto that is a health hazard by itself due to unsafe roads with many daily accidents), and of course the potential of sexual exploitation by the moto driver and the discomfort of being strapped in the back intimately with a man she does not know who sometimes slams on the brakes so the girl's breasts touch his back. Unpublished findings of ongoing research on the 'drivers of child marriage across Sierra Leone' (conducted by Flamingo, with the Population Council) found that girls across the board identified these 'okada drivers' (local parlance for motorcycle riders) as their biggest threats and often responsible for the sexual violence they experience on a daily basis.

And then there is the next hurdle. In school itself, there are many reported incidents of teachers seeking sexual favours from girls, not only for good grades but even for notes with which they can study for exams. A recent baseline study found that almost 10% of 12-year-old girls were reporting regular survival sexual exchanges; given the reluctance girls would have to report this, this is undoubtedly an underestimate [10]. And we should be realistic about conflict itself. It's not a one-off. Paul Collier [11] suggests that the run-up, duration, and aftermath of these conflicts are 12-year-long cycles (and sometimes longer), meaning that many girls (and boys) grow up in a conflict.

Conflict and man-made disruptions exacerbate and expand the social and economic exclusion of females, particularly young females from a young age.

In most places I have worked, the public/safe female space, both social and economic, is shrinking [12], while, in the poorest parts of the world (and perhaps even in some modern economies), the proportion of the costs females bear for older and younger dependents remains high and is possibly increasing. As fertility falls, it does not necessarily translate into a lower dependency burden on females because females are also saddled with the elder caring role and they (post-childbearing) have somewhat longer life expectancies than men in many poor settings. Therefore, they both carry and form a disproportionate share of the older dependents. Unless young females are invested in ways that both allow them to have safe consensual sexual relations, delay childbearing [13] and increase their financial capabilities, their exclusion from modern and cash economies may increasingly require unsafe and unwanted economically driven sexual exchanges, which will increase the likelihood of them contracting viral infections such as HIV, Ebola (because of the persistence of the virus in sperm) or Zika virus (that has been demonstrated to be sexually transmitted). So overall, conflict destabilises the already minimal protection and health delivery systems, promotes sexual exploitation as a political submission strategy and fosters reliance on sexual exchanges for survival by females and others who live off them as 'safety nets.'

There are figures regarding the extremely high female-to-male ratios of HIV incidence [14], in Southern Africa. How would you characterise the trend?

This I would qualify as a long-standing public health shame of the first order. It was perfectly clear by the late 1990s and early 2000s that the epidemic was becoming increasingly (and has remained persistently) young, poor and female. Adolescent girls and young women account for one in four new HIV infections in sub-Saharan Africa and 71% of new HIV infections among adolescents in sub-Saharan Africa [15,16].

This has been a subject of my own work and others for some time – 15 years at least. Happily, USAID, through the DREAMS initiative (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe' women), is seeking to address this. Attention is long overdue,

and we must act to reach the girls at the highest risk for the worst outcomes as early as possible, as the pathways to infection and intergenerational patterns that promote infection are laid early.

Most of the conventionally configured programs have made few or no adjustments in over a decade and devised almost no strategies to reach the youngest, poorest females who are at exceptional risk. Many programs ignore the pervasive geographic ‘apartheid,’ that is, the far greater male-to-female access to public space (perhaps 6 to 1), and if multiplied by the hours of access – males having perhaps 16 hours of access to their spaces and females having 8 to their much smaller space – the differential is as high as 1 to 12 [12].

Many conventionally configured youth programs, including HIV youth programs, may not only exclude females but effectively consolidate new ‘male space,’ [17] such as a youth club that might begin with boys of age 18 but end up being a male club for those 25 or over.

Numerous ‘coverage’ exercises, which assess the degree to which different segments of adolescents in youth populations benefit from the ‘youth investment’ consistently note an inversion of care: that is, the more socially anchored, males, older ‘youth’, school-going populations, unmarried and native-born populations have greater access to youth clubs, peer networks, and other youth interventions than less-anchored (maybe with one or no parent), female, out of school, married, younger and migrant populations. (See for example [18–22]). Many of the opportunity structures are either guided by male membership, economic models or leadership, which exclude females. Thus, these programs, although nominally benchmarked to address a female-centred epidemic, potentially increase young females’ isolation from friendship networks and governance structures, and enforce or expand social ‘silence’ and invisibility. These caring and service ‘establishments’ often get quite settled in with their approach, not looking at or actively denying the structural underpinnings. Some still minimise the role of economic vulnerability in the spread of the epidemic. ‘Social marketing’ approaches are blandly adopted without analysis. Taxi drivers are used to distribute condoms as a form of ‘social marketing’ without an awareness that taxi drivers may also function as sexual procurers. Now, having more condoms out there is better, but such actions are rarely matched with programs that directly build the social capital and protective assets for the most at-risk young females as a primary HIV prevention strategy.

A recent analysis of a program in India indicated that a high proportion of those prostituted females were making ‘dates’ using their cell phones rather than in their places of solicitation (e.g. sex provision venues, brothels). The older female cell phone owners especially were making their own ‘dates’, bypassing trackers/brothel owners/middlemen. It would probably have been wiser to anchor HIV prevention work on those self identified as selling sex to explicitly build their social cohesion, social capital and economic access. Innovations such as cell phones can be used to strengthen social networks as well as carry protective messages.

It is vital that we see sex for gifts and money as an economically driven marketplace rather than sentimental or flimsy social norm terms – girls making ‘bad choices.’ Can anyone imagine that girl children are choosing this life? To empower these girls we must engage in something closer to collective bargaining. The individual prostituted female in a glutted marketplace without economic alternatives has difficulty ensuring condom use since this decreases the price of her service. Only a collectivised bargaining model, creating platforms for female mobilisation and voice (and economic alternatives), can place exploited females in a better position to negotiate safety and condom use.

A logical framework, which treats existing programs as the ‘client,’ such as the ‘condom distribution program,’ the ‘parenting program,’ sets us up to fail in reaching these girls. Budgets and metrics are organised according to these silos and frequently count activities (number of condoms distributed) rather than building protective assets in girls and outcomes at the girl level. The programs designed to reduce HIV infection in young females will only begin to change for the positive when the prioritised subjects or clients are the specific segments of girls at the highest risk of unsafe, unprotected, economically driven sexual relations inside and outside marriage. Having done that, then program decisions are made on a per segment basis and follow sequentially, for example what are the core problems of this set of girls? What are their special seasons or scenarios of risk? What kinds of service do they need? What recruitment strategies will be effective? What venues are safe and importantly, what metrics make the most sense and reflect results?

In the early stages of the adolescent girls program at the Population Council, we worked with this problem statement: ‘to build girls’ health, social, and economic (and later cognitive) assets in ways that assist them in preventing, mitigating the effects of, or leaving unsafe sexual relations.’ These same programs were built with a much broader context, but the core was to chart a safe path from childhood to young adulthood.

Acquiring HIV is obviously a devastating outcome. In any framework we must treat it as such, but if we are concerned about the human rights of girls, it is not the first, but a second consequential outcome. It is a biological marker of preceding (and avoidable) poor outcomes: the social and economic exclusion of girls, resulting in their wholesale sexual exploitation.

As we contemplate solutions, we know several things. We know that girls in groups with higher social capital (controlled for socio-economic status) are less likely to experience sexual coercion [17]. We know that girls who stay in school (whether the school is of good quality or not) have lower rates of HIV and companion biological markers like HSV (B. Mensch *et al.*, personal communication), although that does not mean that schooling prepares them adequately for the labour market, nor does it assure that their income will be commensurate with their education [23]. We know that there are tremendous gaps there. We know that the 10- to 14-year-olds living apart from parents and not in school are often extremely large populations in some countries, yet receive no attention or support, and appear on the ‘screen’, if at all, as an HIV-infected girl or a raped girl. There is very little primary prevention work or effective communication directed at these populations.

A program the Population Council has been involved with, Biruh Tesfa [24], in Ethiopia reached 61,000 of those girls – the core of whom were 8–15 years old, living apart from parents, not in school, and often migrants in domestic service. With such populations, we were able (sometimes in only several months) to hit PEPFAR benchmarks such as good knowledge of HIV, knowing where to get tested, and greater likelihood of getting tested. So, the core of HIV prevention/mitigation in this case entailed targeted recruitment of the most excluded and building their protective assets: friendship networks, safety nets, specific access routes to services (through vouchers, IDs, and introductory health visits) [17,25].

Policymakers and donors need to know this and see the foundational link between girls’ early exclusion and health status. We can better contain any epidemics if we increase both the female social space and channels for safe economic participation. In the highest HIV-burdened countries, well over 50% will become single mothers (by age 45), either because they had children without

partners or, more likely, were economically abandoned, if ever supported, by divorce or widowhood [4]. That's it. That's the sentence:

These girls will be the sole parents and responsible for the majority of the rising generation of the poorest children and, in some countries, the majority of all children. Failure to invest in them and mitigate the structural drivers of their health status (social isolation and economic dependency) is 'planned poverty,' and by extension, in the case of sexually transmitted diseases, a planned epidemic.

As a matter of simple common sense, justice, and health policy, girls need to be more formally equipped and prepared for decent livelihoods. Some of the earliest interventions we undertook at the Population Council in the context of HIV were to study how to expand girls' preparation for decent livelihoods [26]. One of the findings in South Africa, another important data point from our colleague, Kelly Hallman, is that girls were poor at assessing their HIV risk, perhaps feeling powerless across many dimensions of their lives. A financial literacy program was then offered through schools in Pinetown, South Africa, an epicentre of the epidemic, in the 10th and 11th grades, South Africa being quite unique in the very high proportion of adolescents in school. It was observed that just the acquisition of a financial goal changed young female's ability [27] to realistically assess and act upon their HIV risk by changing partners and getting tested. We also know that financial literacy and related 'starter' savings programs are empowering both in content and in 'form' because of their regularity – requiring weekly attendance, creating the kind of weekly social capital for girls that they need. Regularly occurring activities have more impact than a one-off course.

You speak less about health systems and more about the health response. What do you mean by that?

If the analysis provided above is agreed on, there are very clear learning and execution procedures to create a health response, and a resilient community prepared not only to move forward to sustainable development goals, but also in terms to contain modern epidemics. Targeted, evidenced-based programs that reach the poorest girls in the poorest communities are now a core health response. This entails [28]:

- Defining the universe of girls in highly affected communities so that they see all the girls, the most invisible are often the most vulnerable and off-track, out of school, living with one or no parent and far behind grade for age. Such girls are exactly the ones who are likely to live in crowded and environmentally more hazardous spaces, have to engage in poverty-driven exchanges of sex for gifts or money, have children at young ages (often underage) they cannot easily support, leading to a cycle of social exclusion, economic exploitation and disease.
- Creating spaces for girls who are similar in age/schooling/marital status (recognising their internal heterogeneity). These 'segmented' girls are recruited into what we call a 'safe space' or 'platform,' where at least once a week they meet with girls like them. In those places we work with them to give them the specific safety knowledge they need: the seasons of risk they face.
- Mapping their risk cycles. Girls are in the middle of a structural assault and not individually responsible for the risks they are running. There is a need to have a realistic daily/weekly seasonal risk map and first-line protection/response plan.

With reference to these specific segments (for example, girls 10–14 years living apart from parents and not in school, girls 15–17 years

and out of school, girls 15–17 years in school but not at grade for age), help them map the kinds of persons, times of day and week, and seasonal scenarios that bring threats to their health and safety. A recent advance in this is a tool our colleague Kelly Hallman put together called the ASERT tool ([29] and K Hallman *et al.*, personal communication) in which groups of girls are asked to identify what kinds of sexual contacts they have. In the work now being undertaken in a number of places in sub-Saharan Africa, typically between 7 and 11 different kinds of contacts are identified. The majority of contacts are not sentimental partners but gatekeepers to rights and livelihoods, for example taxi drivers, guards in communities denying access to casual labour without 'favours,' and policemen levying 'discretionary' fines for hawking. These are a far cry from the kinds of relationships that are assumed in conventional health/family planning guidance, the rarer romantic ones.

Girls are acquiring diseases as a by-product of trying to secure basic entitlements, like getting to school or work. The program content is informed by the girls' seasonal assessment of the out-of-pocket costs, seasonal risks, and strategies required to raise school fees and survive during scarcity. Food insecurity is associated with sexual coercion and exchanges. A study of 10 African countries found that the girls who reported sexual coercion often came from families that in the previous year had a food security issue [30]. Large public events, which are 'joyous' for the community, such as football games, festivals and long school vacations, are, however, often treacherous for those 'living while girl.'

Consider the following as the core assets girls need to foster health response/recovery and resilience:

- At least five non-family friends
- A community-based place where girls can meet each other and have both physical and aural safety (not being heard by others): they need to be able to have private conversations and be real and authentic with girls like themselves
- A mentor who is someone to turn to in an emergency situation, who could be the leader of the group. Girls need to have a social capital link when they are under threat: 'there is this old guy who has been visiting recently and I think my parents are going to try to marry me to him'
- Personal identification papers are very powerful in building agency and identity, but also practical for establishing a bank account and getting services, which can be linked closely to things like health vouchers
- Age-graded and skill-based learning, especially emphasising financial literacy, and materials that encourage girls to apply reading skills. Girls lose their reading skills because they have little opportunity to practise [31]. Many materials related to economic engagement are of particular interest as well as having content that is valuable, so they are a good place to incubate girls' agency and resume making related decisions.
- A specific plan for community engagement. These girls are a potential army. They could be the bed net installers [32]. The first program I was involved with in Egypt [33] in developing both the girls' confidence in themselves and profile in the community was to have them work in pairs in the garbage collecting communities mobilising the tetanus toxoid campaign (a very specific and high risk owing to cast off metals and batteries to all, including pregnant mothers). Many health plans and community campaigns could potentially be implemented through groups of supported and valued adolescent girls and extending the reach of clean water technologies, malaria eradication, tetanus toxoid and Zika containment programs.

- Incubator savings: a safe place to keep their money, and ideally linked also to longer-term financial products, since girls are typically stronger savers and often more committed than boys [34]. But, often they are less likely to be able, without support, to get savings accounts by a factor of four, in one South Africa study. Further, lacking security of savings may increase their vulnerability (the domestic servant who gives her money to her employer to ‘hold’ who is already paying her \$7/month and who then has even more leverage over her, which translates into abuse potential).
- Lastly, and I add this in light of climate change and rising energy deficits, I would include a basic introduction to clean, green technologies with practical value, for example solar lanterns by which you can study and read, or aqua packs, but that are also community health assets and increase psychological comfort and public association with the technical world (without it signifying a sexual relationship: a girl with a cell phone currently may mean to others that she has slept with an older man or as a way to make ‘sex’ dates). Let’s expand girls’ presence in new energy value chains as solar energy managers and fixers of water pumps.

Access to services does not cut it – we must reach these girls before their self-esteem is destroyed, their bodies appropriated and their economic choices anchored around sexual exchanges and its viral health risks to them.

In summary, an effective health response requires solid investments in the poorest girls in the poorest communities, reaching enough of the right girls with enough things (multi-dimensional content) early enough to make a difference. This is true prevention and avoids girls ‘mounting the flywheel’ of sexual exploitation and pregnancies they cannot support, leading to a continuing cycle of ill health and poverty.

There is undoubtedly a place for technology, but with adaptations for younger populations. There is a discussion now about introducing PrEP to young female populations [35]. The evidence on the young population experience is variable, and there are unresolved issues and effective strategies for consent, compliance and accurate reporting. What one could do is combine some of the interventions that I have described by operating through girl platforms, places where these girls meet to offer PrEP or the dapivirine vaginal ring in addition to building resources: skills, long-term assets for resilience and economic participation and recovery. So we have to think of PrEP in the context of buying a little bit of time for a very selected population of young women while they are building their skills and the resources to change course and be able to support themselves and their children.

To conclude, investments in these girls are foundational elements of a longer-term health response. We are not always going to successfully prevent illness, but we can limit and contain it, and increase the rate of recovery of individuals and societies. At the centre of this story in many communities will be effective and scalable investments in the poorest girls in the poorest communities.

References

1. Atkinson HG, Bruce J. Adolescent girls, human rights and the expanding climate emergency. *Ann Glob Health* 2015; **81**: 323–330.
2. Bruce J. Lost girls: the child brides of Afghanistan, Nepal, and Ethiopia. In: Cohen DE (ed.) *What Matters: The World’s Preeminent Photojournalists and Thinkers Depict Essential Issues of Our Time*. New York, USA, Sterling Publishing, 2008.
3. Bruce J, Erulkar A. A short history of the long struggle to identify and eliminate child marriage: Amhara, Ethiopia as a case study In: Chesler E, McGovern T (eds.) *Women and Girls Rising: Progress and Resistance Around the World*, 2015.
4. Clark S, Hamplova D. Single motherhood and child mortality in sub-Saharan Africa: a life course perspective. *Demography* 2013; **50**: 1521–1549.
5. UNFPA. Rapid assessment of pregnant adolescent girls in Sierra Leone. Freetown, Sierra Leone: UNFPA; 2015.
6. Ebola Deeply. Ebola and Women: Chemor Bah on the Impact on Girls in Sierra Leone. 2014. Available at: <http://archive.eboladeeply.org/articles/2014/11/6494/ebola-women-chemor-bah-impact-girls-sierra-leone/> (accessed June 2016).
7. Bagnetto LA. Pregnant girls barred from school and a right to education. 2015. Available at: <http://en.rfi.fr/africa/20150329-sierra-leone-pregnant-girls-barred-school-human-rights-education-ebola-education> (accessed June 2016).
8. Homer-Dixon T. The ingenuity gap: can poor countries adapt to resource scarcity? *Pop Dev Rev* 1995; **21**: 587–612.
9. Mourtada R. Early marriage in Syrian conflict-affected population. Lebanon: American University of Beirut and Women’s Refugee Commission; 2014.
10. BRAC. Empowerment and Livelihood for Adolescents. Sierra Leone. Baseline Report. Innovation for Poverty Action. BRAC, UNICEF, IPA, Government of Sierra Leone; 2014.
11. Collier P. *The Bottom Billion: Why the Poorest Countries are Failing and What Can be Done About It*. New York, USA: Oxford University Press; 2008.
12. Hallman KK, Kenworthy NJ, Diers J et al. The shrinking world of girls at puberty: violence and gender-divergent access to the public sphere among adolescents in South Africa. *Glob Public Health* 2015; **10**: 279–295.
13. Bruce J, Bongaarts J. The new population challenge. In: Mazur LA (ed.) *A Pivotal Moment: Population, Justice, and the Environmental Challenge*. Washington DC, USA, Island Press, 2010: 260–275.
14. DREAMS. Working together for an AIDS-free future for girls and women. Available at: <http://www.pepfar.gov/documents/organization/247602.pdf> (accessed June 2016).
15. Dellar RC, Dlamini S, Karim QA. Adolescent girls and young women: key populations for HIV epidemic control. *J Int AIDS Soc* 2015; **18**: 19408.
16. UNAIDS. The gap report. 2014. Available at: http://www.unaids.org/en/resources/documents/2014/20140716_UNAIDS_gap_report (accessed June 2016).
17. Bruce J, Hallman K. Reaching the girls left behind. *Gender Dev* 2008; **16**: 227–245.
18. Lardoux S, N’Bouke A. Reaching adolescents and youth in Burkina Faso, Guinea-Bissau and Mauritania. *African journal of reproductive health* 2013; **17**: 73–84.
19. Mekbib T-A, Erulkar A, Belete F. Who are the targets of youth programs: Results of a capacity building exercise in Ethiopia. *Ethiop J Health Dev* 2005; **19**: 60–62.
20. Erulkar AS, Mekbib TA, Simie N, Gulema T. Differential use of adolescent reproductive health programs in Addis Ababa, Ethiopia. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine* 2006; **38**: 253–260.
21. Amin S, Austrian K, Chau M et al. The adolescent girls vulnerability index: Guiding strategic investment in Uganda. New York USA: Council P; 2013. Available at: http://www.unicef.org/uganda/PGY_AGI_Uganda_2013.pdf (accessed June 2016).
22. Weiner A. Geographic variations in inequities in access to sexual and reproductive health services. *Studies in family planning* 2010; **41**: 134–138.
23. Lloyd CB. *Growing Up Global: The Changing Transitions to Adulthood in Developing Countries*. Washington DC, USA: National Academies Press; 2005.
24. Erulkar A. Building the assets to thrive: addressing the HIV-related vulnerabilities of adolescent girls in Ethiopia. 2014. Available at: http://www.popcouncil.org/uploads/pdfs/2014PGY_BuildingAssetsThrive.pdf (accessed June 2016).
25. Bruce J, Temin M, Hallman K. AIDSTAR-One Spotlight on Gender. Evidence-based approaches to protecting adolescent girls at risk of HIV. 2012. Available at: https://aidsfree.usaid.gov/sites/default/files/evidence-based_approaches_protecting_adolescent_girls_at_risk_hiv.pdf (accessed June 2016).
26. Chong E, Hallman K, Brady M. Investing when it counts: generating the evidence base for policies and programmes for very young adolescents. Guide and tool kit. New York, USA: Council P; 2006. Available at: http://www.popcouncil.org/uploads/pdfs/InvestingWhenItCounts_2006.pdf (accessed June 2016).
27. Hallman K. Social exclusion: the gendering of adolescent HIV risks in KwaZulu-Natal, South Africa. In: Klot J, Nguyen V-K (eds.) *The Fourth Wave: An Assault on Women – Gender, Culture and HIV in the 21st Century*. Paris, France, UNESCO, 2011: 53–80.
28. Bruce J. Commentary: Investing in the poorest girls in the poorest communities early enough to make a difference. *Glob Public Health* 2015; **10**: 225–227.
29. Hallman K, Cerna-Turoff I, Matee N. Participatory research results from training with the Mabinti Tushike Hatamu out-of- school girls program. New York: Council P; 2015. Available at: http://www.popcouncil.org/uploads/pdfs/2015PGY_TanzaniaParticipatoryResults.pdf (accessed June 2016).
30. Andersson N, Paredes-Solis S, Milne D et al. Prevalence and risk factors for forced or coerced sex among school-going youth: national cross-sectional studies in 10 southern African countries in 2003 and 2007. *BMJ open* 2012; **2**: e000754.
31. Soler-Hampejsek E, Kelly CA, Mensch BS et al. Gender differences in the retention of literacy and numeracy in Malawi. Annual Meeting of the Population Association of America. May 2014. Boston, MA, USA. Abstract P5-51.
32. Catino J. The health of vulnerable adolescent girls: a strategic investment for double return. New York, USA: Council P; Available at: http://www.popcouncil.org/uploads/pdfs/2012PGY_GirlsFirst_Health.pdf (accessed June 2016).
33. Assaad M, Bruce J. Empowering the next generation: the girls of the Maqattam Garbage Settlement. *Seeds* 1997; **19**.
34. Hallman K, Govender K, Mbatha E, Walsh J. Social capital, socioeconomic aspirations, and HIV risk behaviour among poor South African youth. 3rd South African AIDS Conference. June 2007. Durban, South Africa.
35. International Partnership for Microbicides. Two large studies show IPM’s monthly vaginal ring helps protect women Against HIV. 2016.

Further reading

Pascoe SJ, Langhaug LF, Mavhu W *et al*. Poverty, food insufficiency and HIV infection and sexual behaviour among young rural Zimbabwean women. *PLoS One* 2015; **10**: e0115290.

McCoy SI, Buzdugan R, Ralph LJ *et al*. Unmet need for family planning, contraceptive failure, and unintended pregnancy among HIV-infected and HIV-uninfected women in Zimbabwe. *PLoS One* 2014; **9**: e105320.

Morris JL, Rushwan H. Adolescent sexual and reproductive health: the global challenges. *Int J Gynaecol Obstet* 2015; **131 Suppl 1**: S40–42.

Gandhi AD, Pettifor A, Barrington C *et al*. Migration, multiple sexual partnerships, and sexual concurrency in the Garifuna population of Honduras. *AIDS Behav* 2015; **19**: 1559–1570.

Kharsany AB, Frohlich JA, Yende-Zuma N *et al*. Trends in HIV prevalence in pregnant women in rural South Africa. *J Acquir Immune Defic Syndr* 2015; **70**: 289–295.

Fatti G, Shaikh N, Eley B *et al*. Adolescent and young pregnant women at increased risk of mother-to-child transmission of HIV and poorer maternal and infant health outcomes: a cohort study at public facilities in the Nelson Mandela Bay Metropolitan district, Eastern Cape, South Africa. *S Afr Med J* 2014; **104**: 874–880.