



THE IMPACT OF GIRLS' EDUCATION ON HIV AND SEXUAL BEHAVIOUR

Girl power

The impact of girls' education
on HIV and sexual behaviour

By James Hargreaves and Tania Boler

Acknowledgements

The authors would like to thank Christy Abraham, Vicky Anning, Dilhan Attanayake, David Archer, Prabodh Devkota, Victorine Kemonou Djitrinou, Lucia Fry, Judith Glynn, Maysa Jalbout, Anne Jellema, Linda Liviani, Akanksha Marphatia, Kara Mitchell, Linda Morison, Brendan O'Donnell, Thomas Odemwingie, Leonard Okello, Judy Polsky, Stephanie Ross, Justine Sass, Scott Walker, Simon Wright and Faria Zaman.

ActionAid gratefully acknowledges financial support for this review from the Canadian International Development Agency (CIDA).

© ActionAid International

For citation purposes: Hargreaves, J. and Boler, T. Girl power: the impact of girls' education on HIV and sexual behaviour. ActionAid International, 2006.

Glossary

AIDS	Acquired immune deficiency syndrome
CIDA	Canadian International Development Agency
DfID	UK Department for International Development
FTI	Fast Track Initiative
GCE	Global Campaign for Education
HIV	Human immunodeficiency virus
IMF	International Monetary Fund
UNESCO	United Nations Education, Science and Cultural Organisation



Executive summary	3
Chapter 1	
1.0 Introduction and background	7
1.1 Background	9
1.2 The feminisation of the epidemic	9
1.3 Why are young women vulnerable to HIV infection?	11
1.4 How might girls' education affect vulnerability to HIV?	12
1.5 Summary	15
Chapter 2	
2.0 Methodology	17
Chapter 3	
3.0 Results of the review	23
3.1 The impact of education on HIV rates	25
3.2 The impact of education on sexual behaviour	26
3.3 Further issues arising from the review	28
3.4 Revisiting possible mechanisms	30
3.5 Summary	31
Chapter 4	
4.0 Conclusions and recommendations	33
References	39

This year marks the 25th anniversary of the first diagnosis of AIDS. This year, over one hundred countries pledged to ensure universal access to AIDS prevention, treatment and care by 2010. However, despite these grand promises, countries and donors are failing to launch the type of large-scale prevention efforts that are needed to reverse the spread of HIV.

The AIDS epidemic continues to evolve, staying one step ahead of our attempts to prevent it. There are 13,500 new HIV infections every day. One of the latest facets of this dynamic disease is the increasing feminisation of AIDS: in Africa, where the HIV and AIDS epidemic has hit hardest, 74% of young people living with HIV are women.

HIV prevention campaigns often fail to address the increased vulnerability of young women because they fail to deal with the simple fact that many women lack the power to determine who to have sex with, or when and how to have sex. The new challenge is how to empower young women to assert their sexual and reproductive rights. Of the possible solutions, giving girls an education is widely recognised as the best way to provide this girl power.

However, in the rush to tackle the AIDS crisis, our response has forged ahead of the evidence, especially as some of the research on girls' education and vulnerability to HIV has yielded mixed results. The most rigorous way to make sense of the different pieces of evidence is to conduct a systematic review – examining all possible evidence according to a predetermined set of criteria. To date, there has only been one such review, which was conducted four years ago – a long time in the context of a rapidly evolving AIDS epidemic.

Given the importance of basing our response to HIV on solid evidence, ActionAid collaborated with the researcher from the original review – James Hargreaves – and conducted a systematic review of all the research published between 1990 and 2006 in eastern, southern and central Africa to address the following research questions:

- 1 What is the impact of girls' education on sexual behaviour and HIV?
- 2 What difference does primary or secondary education make to women's vulnerability to HIV?
- 3 What are some of the possible mechanisms underlying the relationship between HIV and girls' education?

The results show strong evidence that, early in the epidemic (before 1995), more highly educated women were more vulnerable to HIV than women who were less well educated. The most likely reason is that more highly educated people had better economic prospects, which influenced their lifestyle choices such as mobility and number of sexual partners. They were also more likely to live in urban areas where HIV prevalence rates were highest. At that stage, there was also a general information vacuum about HIV and AIDS in Africa.

However, as the epidemic has evolved, the relationship between girls' education and HIV has also changed. Now, more highly educated girls and women are better able to negotiate safer sex and reduce HIV rates. The more education the better. Across all the countries reviewed, girls who had completed secondary education had a lower risk of HIV infection and practised safer sex than girls who had only finished primary education. Put simply, education is key to building "girl power"! There are also inter-generational benefits of education, with more highly educated adults having a positive bearing on young women's condom use. Moreover, more education empowers boys and men to practise safer sex, thus reducing their own, and their partners', risk of infection.

Despite the power of girls' education and numerous international commitments to education, the reality is that the vast majority of girls in Africa will not complete primary education, let alone manage to get to secondary school. A key obstacle is the rising cost of education. Most children in Africa have to pay to go to primary school, paying increasing amounts as they rise through the grades, particularly if they enter

4 secondary school. This leads to the exclusion of many children from education, especially girls.

If we are to see the real benefits of educating girls, then fees need to be removed and governments and donors need to be urged to invest more in primary and secondary education. Any increase in funding to education should not be seen as an alternative to the universal goals of HIV prevention, care and treatment but rather as a complementary response that lays a solid foundation for our HIV prevention efforts.

The gap between the epidemic and the response is – in some countries – narrowing. This report shows that it is possible to stay ahead of the virus – but only when individuals (particularly women and girls) have the power to choose who they have sex with, and when and how they do so. Educating girls and women is one huge step towards turning around the AIDS epidemic in Africa.

Summary of results

Formal education can influence vulnerability to HIV in five different ways:

- 1 Expose girls to HIV and AIDS education, which helps prevent HIV.
- 2 Provide psychosocial benefits for young women, helping them to build their self-esteem and capacity to act on HIV prevention messages.
- 3 Lead to better economic prospects, which in turn lead to lifestyle changes that can influence HIV vulnerability.
- 4 Influence the level of power within sexual relationships.
- 5 Affect the social and sexual networks of girls.

Impact of girls' education on HIV rates

In total, over 600 articles were identified for the review, of which only 45 met the review criteria. Of these, 22 articles examined the impact of education on HIV rates and revealed the following findings:

- Before 1995, 10 out of 13 articles showed girls' education had a negative impact on HIV infection rates (more education, more HIV).

However,

- After 1995, none of the research showed more highly educated women to have higher rates of HIV infection. Half of the articles reviewed showed no association between HIV and education, and the other half showed girls' education to have a positive impact on HIV vulnerability (more education, less HIV).
- An additional five studies examined HIV rates over time and found HIV vulnerability to be decreasing in the most educated groups and increasing or remaining stable in the least educated groups.

These findings suggest that the impact of girls' education on HIV is changing as the epidemic evolves. The evidence shows that, as the epidemic matures, the impact of girls' education reverses and starts having a positive impact. This changing relationship between education and HIV rates is strongly supported by studies taken over time in four countries. A change is occurring in which more highly educated women are becoming less vulnerable to HIV and at the same time, less well educated women are becoming more vulnerable.

Impact of girls' education on sexual behaviour

The studies looked at a wide range of sexual behaviour outcomes and the results can be summarised as follows:

- Six out of eight articles showed that girls who had received more education were more likely to start having sex at a later age. None of the articles showed a link between more education and earlier sexual activity or sexual debut.
- 10 out of 13 articles showed that higher levels of girls' education were related to higher levels of condom use. Again, none of the articles suggested that more education might lead to less condom use.
- Education was also related to levels of coercive sex, transactional sex, age difference between partners, and relationships with commercial sex workers. However, the number of studies are too small to find any trends.

The most striking finding is that more highly educated women are more likely to use condoms during sex. The finding on earlier sexual activity is slightly more difficult to interpret as it is also likely that the relationship actually works the other way: earlier sexual activity impacts negatively on education. Put simply, young women who are sexually active are more likely to get pregnant and therefore drop out of school.

Boys' or girls' education?

Is the impact of education on HIV vulnerability different for young women and men? Our analysis shows no striking gender differences. The fact that education helps to protect against HIV holds true as much for boys as for girls. Although the focus of this report is on young women, empowering young men through education is as much a part of the solution to the HIV epidemic as targeting young women. However, focusing on girls' education remains important as girls tend to have less access to education and are therefore more vulnerable to HIV and AIDS.

Primary or secondary education?

There were six studies that compared the results for primary and secondary education. In all of these studies, completion of secondary education was related to lower HIV risk, more condom use and fewer sexual partners compared with completion of primary education. These results tentatively suggest that more education is linked to better protection against HIV. The relative importance of investing more resources in primary or secondary education is less clear – but self-evidently, no girl will be able to access secondary school unless she has been to primary school. Tens of millions of girls are still excluded even from the first grade at school.

Of course, it should be noted that even when they have completed secondary education, women are still vulnerable to HIV infection. In other words, education helps protect women but many other measures are also needed.

Mechanisms

Very few of the studies reviewed attempted to look at the underlying mechanisms through which girls' education might impact on HIV vulnerability. The scant evidence that does exist suggests that increased condom use is likely to be a factor. Economic status is clearly also a factor, although it is hard to separate this from education. Eight studies tried to show the relative strengths of education and economic status and their bearing on HIV vulnerability:

- One study shows education is more important than economic status.
- Two studies show economic status is more important than education.
- Five studies show it is impossible to separate education and economic status.

Recommendations

- 1 Prevention messages need to address gender and power dynamics within sexual relationships, so that both girls and boys can become confident enough to overcome negative stereotyping and peer pressure.
- 2 The education sector response to HIV and AIDS needs to be prioritised and all schools should provide comprehensive sexual health education with a special focus on HIV and family planning. Promoting condoms is a message that is working and should be encouraged.
- 3 Schools should foster gender equality, promote positive role models and challenge negative gender stereotyping. Zero tolerance should be shown towards sexual violence and towards teachers having sexual relationships with students.
- 4 Schools need to respond to the problem of teenage pregnancy by providing comprehensive sex education to reduce pregnancy and improve sexual health. Part of the response should include policies on how to encourage teenage mothers to return to education.
- 5 In order to expand girls' education, all forms of school fees in primary education should be abolished. This policy must be accompanied by adequate planning and resources to

- 6 cover the loss in funding from the fees and also to meet the increased demand when education becomes free. The quality of education provision must not suffer and governments should resist the practise of hiring non-professional teachers.
- 6 Expansion of the Fast Track Initiative (FTI) – a pledge made by the international community to make sure that all countries have enough resources to provide basic education – should be encouraged. Donors need to prioritise filling the immediate resource gap in FTI (\$510 million) and the long-term gap of \$10 billion.
- 7 Macroeconomic constraints that prevent governments from expanding their spending on girls' education need to be removed. To get all girls into school and to keep them there requires the recruitment of millions of new professional teachers. This means lifting public sector wage bill caps imposed by the International Monetary Fund (IMF) and generating open public debate about the trade-offs between driving towards low inflation targets and ensuring adequate spending on education and HIV and AIDS.
- 8 More focus needs to be placed on removing the bottlenecks between completion of primary school and access to secondary school, particularly for girls. This will require significant expansion of secondary schooling in many countries and specific interventions to remove the obstacles faced by girls wishing to continue their education.
- 9 More research on young people, HIV vulnerability and teenage pregnancy is desperately needed. All data should be separated by gender. More longitudinal studies are also needed to understand the reasons why education might protect against HIV, as well as research comparing the impact of primary and secondary education on HIV vulnerability. Finally, systematic reviews of existing literature should be encouraged in order to build upon the research that already exists, rather than reinventing the wheel.

“The most vulnerable part of the human factor in this raging, all-consuming pandemic of HIV and AIDS in Africa, is the vulnerability of women and girls. Seventy-five percent of the infected 15–24 year-olds in Africa – almost five million – are young women and girls. This is the legacy of gender inequality. This is what gender inequality hath wrought.”
Stephen Lewis, XV International AIDS Conference, Bangkok, 2004



1.1 Background

AIDS has been a reality in many parts of the world for more than 25 years. As the epidemic evolves and matures across areas of eastern and southern Africa, researchers have tried to keep pace with its changing course. Evidence often conflicts within and across countries and can – at times – lead to a frustrating situation in which the response is forced to rush ahead of the evidence.

In the field of education and HIV and AIDS, there have been two opposing points of view in which some have argued that individuals with higher levels of education are more vulnerable to HIV,¹ whereas others argue that more education (especially girls' education) protects against HIV infection.²

In the middle of this debate is growing evidence of the “feminisation of the epidemic” in which girls and women are becoming disproportionately infected with the virus. Although there are a number of reasons why women might be more vulnerable to infection,³ many have suggested that underlying gender inequality leaves women vulnerable to HIV. One of the pivotal responses to this claim has been to promote universal girls' education in order to reduce HIV vulnerability.

However, one underlying assumption is that higher levels of education reduce HIV vulnerability for girls. Yet the evidence varies considerably from country to country, over time and across regions. Moreover, there is little understanding about how simply going to school might reduce HIV vulnerability, nor how much schooling is needed: is primary schooling enough or is it secondary education that really matters?

This report attempts to answer some of these questions by conducting a systematic review of the evidence on the impact of schooling on: a) sexual behaviour, and b) HIV rates. This first chapter discusses the factors that

underlie the rapid spread of HIV infection amongst young women and identifies some of the possible mechanisms through which girls' education might affect HIV risk by interacting with these factors. The second chapter outlines the methodology we used and the third chapter outlines the results. Finally, chapter four presents conclusions and recommendations.

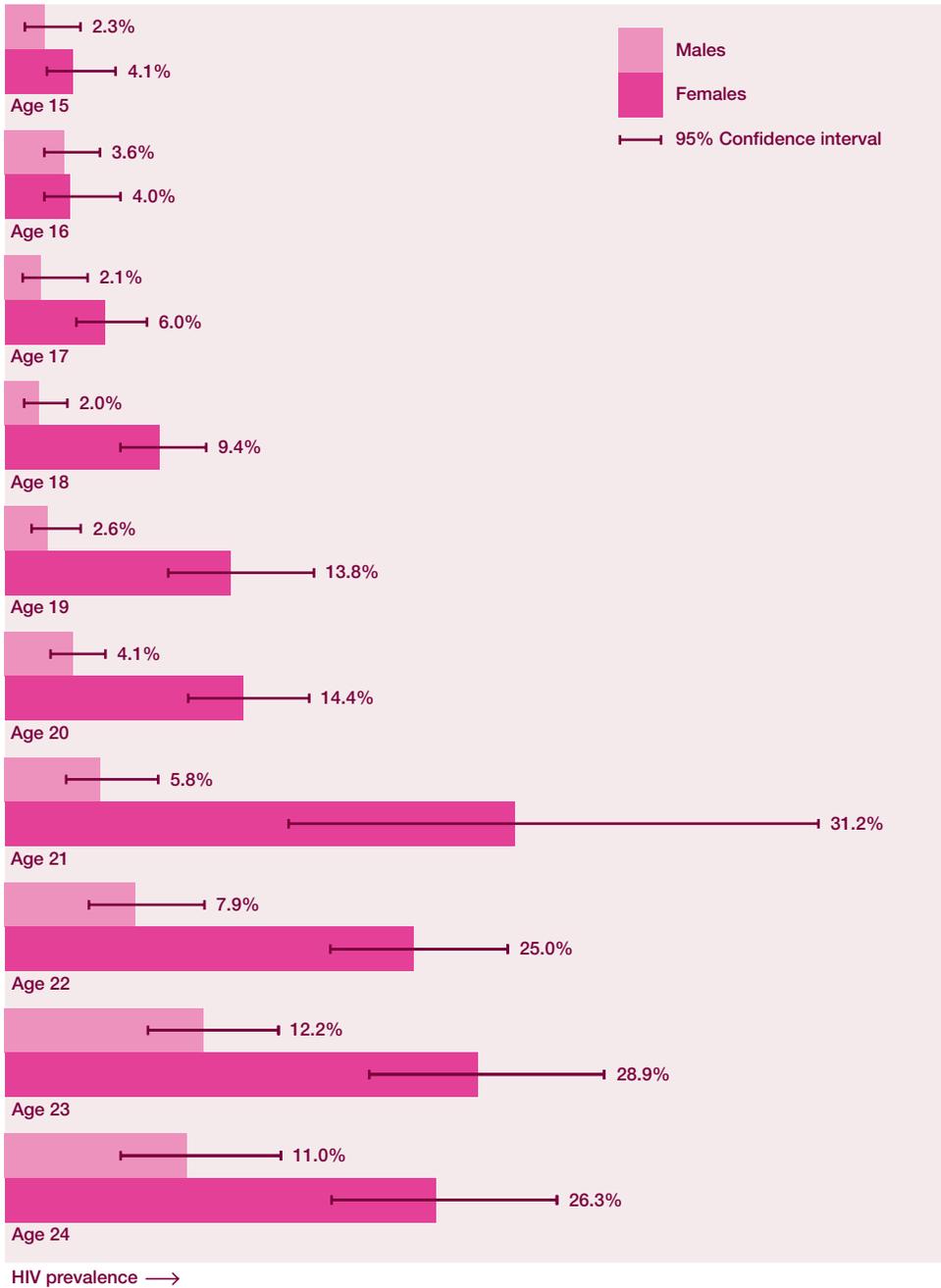
1.2 The feminisation of the epidemic

The burden of HIV infection among girls and young women is growing. During the early years of the epidemic, the greatest burden of infection was seen among men. However, women now make up 57% of infections in sub-Saharan Africa with some 17 million women living with HIV at the end of 2003;⁴ studies suggest that young women in the region are two to seven times more likely to be infected with HIV than young men.^{3,5,6}

The feminisation of the epidemic is particularly acute in sub-Saharan Africa because heterosexual transmission has been the main mode of transmission for some time. In other regions of the world, men are still more likely to be infected with HIV than women, as the main mode of transmission is either homosexual transmission, injecting drug use or commercial sex work. Given these regional differences in HIV epidemiology, our research is restricted to eastern, southern and central Africa, where the epidemic is at its most mature.

By far the biggest driver of HIV infection for young women in sub-Saharan Africa is heterosexual transmission. Figure 1 shows a typical pattern across southern and eastern Africa in which young women (aged 16) have very low HIV prevalence rates (below 5%) but women just five years older harbour prevalence rates over 20%.⁷ HIV spreads very quickly among young women as they become sexually active. The next section will look at some of the reasons why young women are so vulnerable to HIV.

Figure 1 Prevalence of HIV infection among young men and women in South Africa



Source Pettifor et al. Young people's sexual health in South Africa.⁷

1.3 Why are young women vulnerable to HIV infection?

At a very simple and epidemiological level, there are three broad factors that influence vulnerability to HIV infection in epidemics where heterosexual transmission is the main mode of infection:

- 1 level of sexual activity
- 2 HIV status of sexual partner
- 3 likelihood that HIV is transmitted during sex.

These factors are only the immediate risk factors for infection and are themselves the end product of a wide range of social, behavioural, economic and cultural factors (see Figure 2).

1.3.1 Level of sexual activity

Women who are more sexually active are more vulnerable to HIV infection. A number of important behavioural traits are related to this factor, including:

- the age at which young women first start to have sex
- their overall number of sexual partners
- the frequency with which they have sex with these partners
- type of relationships (eg serial monogamy or concurrent sexual partnerships).

Many HIV prevention messages target sexual behaviour, but a closer examination of these four factors reveals a range of community, societal, gender-related and economic factors which, in turn, affect these four categories of behaviour. The implication is that HIV prevention messages that focus solely on these four factors are overly simplistic and misguided, as they are based on the assumption that individuals have control over their behaviour and that sexual behaviour is rationally determined.⁸

1.3.2 HIV status of sexual partners

A young woman's vulnerability to HIV is obviously linked to the likelihood that her sexual partner is infected with the virus. Thus a young woman having unprotected sex in a country with low HIV prevalence is less likely to be infected with HIV than if

she were doing so in a country with high HIV prevalence.

One serious risk factor for young women in Africa is having sexual partners who are much older than themselves: older men have had a longer time to become infected and age-mixing is an important but neglected dimension to the AIDS epidemic in Africa.^{9,10} After all, if new generations of young men and women were to have sex only with individuals of their own age group, HIV would not spread to this group and they would remain free of HIV infection. In practice, young women in most sub-Saharan African settings form partnerships with older men as well as with young men from their own peer group, and this is key in propagating infection from one generation to the next.

The question therefore arises as to why young women are having sex with older men. What are the cultural and economic reasons? Do gender-related power relations mean that younger women are attracted to older men because of their higher status? Do older men use their position of power to have sex with younger women? Evidence shows that inequalities between older men and younger women affect how often a woman has sex, the type and frequency of sex, and whether condoms are used.¹¹ In the context of a catastrophic AIDS epidemic, what is the best prevention strategy for a young woman who feels powerless to choose who she has sex with, and when and how she has sex?

1.3.3 Likelihood that HIV is transmitted during sex

Biologically, young women are at a double disadvantage in terms of becoming infected with HIV. First, during sex, women are at least one and a half to four times more likely to become infected than men;¹² second, it appears that the younger the woman, the more likely she is to contract the virus as her reproductive system may not be fully mature.³

In addition, the likelihood of becoming infected during sex increases if somebody has untreated sexually transmitted infections (STIs),

which affects women particularly as these infections are more likely to go undiagnosed.

Young women are also vulnerable to HIV during violent sex because of possible damage to the female genital tract. The links between sexual violence and HIV infection are poorly understood,¹³ but the underlying gender inequality between men and women can create an environment in which sexual violence against women is tolerated, and thus women's vulnerability to HIV is increased.

As mentioned earlier, these sexual behaviours are themselves influenced by a wide array of cultural, community, economic and social factors. One of the biggest problems with discussing why women are vulnerable to HIV is the level of complexity involved in human sexual relations.¹⁴ Sexual behaviour also changes within relationships and many of the factors described above are related to one another. For example, people might use condoms at the beginning of a relationship but over time – as trust grows – stop using them.

Education could, in theory, play a role in influencing each of the factors mentioned above, which in turn could increase or decrease women's vulnerability to HIV.

The next section outlines a conceptual framework regarding how education might impact on sexual behaviour and HIV.

1.4 How might girls' education affect vulnerability to HIV?

Attending school and gaining a higher level of education can influence the sexual behaviours described above in a number of different ways. Once again these pathways are not independent, but for the sake of simplicity they have been categorised as follows:

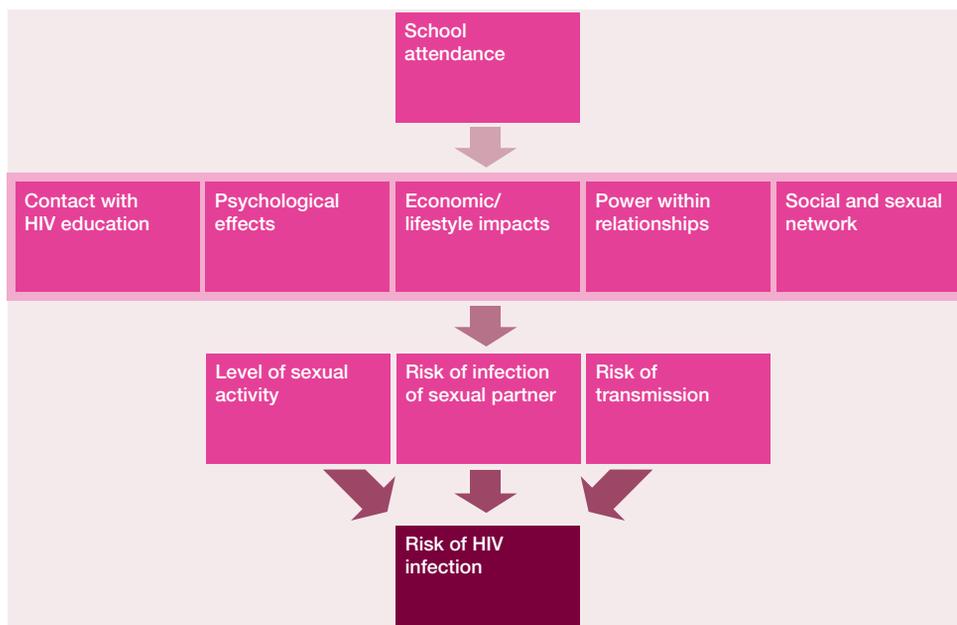
- 1 contact with school-based HIV and AIDS education
- 2 psychosocial benefits of girls' education
- 3 economic and lifestyle impacts of girls' education
- 4 power balance within sexual relationships
- 5 social and sexual networks.

1.4.1 School-based HIV and AIDS education

As governmental and non-governmental responses to HIV and AIDS gather pace across sub-Saharan Africa, access to HIV prevention messages has increased dramatically and the information vacuum that existed a mere 10 years ago is more and more of a rarity. Although HIV prevention messages have taken advantage of a wide range of different mediums and have targeted many different sub-groups, research by ActionAid shows that the most trusted source for young people to learn about HIV is through schools and teachers.¹⁵

A recent survey conducted jointly by the Health Economics and HIV/AIDS Research Division (HEARD) at the University of KwaZulu-Natal and ActionAid shows that 85% of countries with a high HIV prevalence have established some sort of HIV and AIDS curriculum in primary schools.¹⁶ Although the report also highlights the shocking implementation gap, it seems reasonable to conclude that attending school can increase a young person's contact with school-based HIV and AIDS education and thus reduce their vulnerability to infection.

It should be noted that this review does not explicitly look at the role of school-based HIV and AIDS education in reducing women's vulnerability, even though it is possible that the effects of girls' education on HIV could be operating through contact with school-based HIV and AIDS education.



1.4.2 Psychosocial benefits of education

Behavioural and cognitive science have long emphasised the importance of not only providing information on how to change behaviour, but also trying to strengthen women's confidence and capacity to act on these messages. General education, even in the absence of school-based HIV and AIDS education, might help to improve such qualities. Conversely, the least educated members of society may have relatively low self-esteem, self-efficacy and a negative outlook on the future.¹⁷ Consequently, they may be less likely to protect their health by having fewer sexual partners or using condoms. This will be particularly true when peer pressure is exerted in ways contradictory to HIV prevention messages. A common example of this is being pressured by peers to have sex at an early age.

1.4.3 Economic and lifestyle impacts of girls' education

Numerous studies have shown that increased education has a positive impact on economic prospects for both men and women, as more highly educated individuals are more likely to find regular employment and earn higher wages.¹⁸ These economic benefits in turn influence a wide range of factors, including the spread of infectious diseases; more educated individuals are often more geographically and socially mobile.

In this scenario, the more education a person receives, the greater their vulnerability to HIV. Women with increased education may be more likely to form partnerships with more highly educated and richer men, who may have multiple partners and/or engage in commercial sex, thus increasing women's vulnerability to HIV infection. Greater mobility also puts young women of higher socio-economic status in contact with larger social and sexual networks, which could, in theory, increase their number of potential sexual partners. On the flip side, among the poorest

communities the economic opportunities afforded by a higher education may prevent women from entering into activities that carry a high risk of infection, such as commercial sex work or other relationships that are entered into primarily to provide resources. In this respect, girls' education might help protect women from HIV infection.

1.4.4 Power within sexual relationships

The ways in which girls' education might affect HIV vulnerability can be considered on both an absolute and a relative scale. While absolute levels of education might drive the pathways described above, the level of a young woman's education relative to her male partner's level of education also has important consequences. In many African settings, it remains socially acceptable for men to have many sexual partners, but unacceptable for women to do so.^{19,20} Within these same settings, women are often more likely to leave school early, be unemployed and earn low wages.²¹ These women are therefore entering into sexual relationships characterised by a significant power imbalance.

Such power imbalances within relationships are compounded by the common practice of young women going out with much older men. Older men might be seen as better options as boyfriends and husbands because they are in a better position to provide material support. Gifts and money are seen by many as an intrinsic component of any sexual relationship,²² thus further increasing women's economic dependence. Both the inferiority in age and economic dependence of women decreases their power to negotiate within sexual relationships.

What implications does this power imbalance within relationships have for HIV vulnerability? The problem is that it is often the men who dictate when to have sex and how. Since many men prefer not to use condoms,²³ their wishes – within an unequal relationship – are very likely to prevail. Sexual violence is an extreme manifestation of this power imbalance within relationships and may particularly affect women who have not received much education, who in turn are less

able to negotiate within a relationship. Each of the scenarios above suggests that education is a positive factor in reducing HIV vulnerability for young women – but this is not always the case. Power imbalances within relationships are never more obvious than in relationships between a teacher and a student. Although the evidence is currently mostly anecdotal or qualitative in nature, an increasing number of studies suggest that some male teachers in African schools abuse their higher position of power to initiate sex with female students.²⁴ For the economic and power-related reasons cited above, it may even be the case that some female students and their parents encourage such relationships. Whatever the circumstances, the gross power imbalance between a teacher and a student can place a young woman in a position of high vulnerability.

1.4.5 Social and sexual networks

Another potential pathway between girls' education and HIV vulnerability is related to factors to do with going to school rather than overall educational attainment.

Attending school influences the social network of a young person, affecting the group of people with whom they have contact. In turn, these contact patterns may influence the formation of sexual partnerships. Research suggests that HIV vulnerability is influenced by the size of a person's sexual network and an individual's position within that network.²⁵ The effects could be either positive or negative. On the positive side, being at school might limit the pool of potential sexual partners and thus reduce the numbers of partners. It is also plausible that young women at school are more likely to choose boyfriends within school who are of a similar age and are therefore less sexually experienced than older men (thus reducing their vulnerability to HIV infection).

Some studies have also shown that being at school can lead to positive communication, group bonding and group negotiating within social networks, which in turn can create more positive attitudes towards sex and HIV.^{8,26} This group negotiation is thought to occur both within gender groups and across

them. School attendance may also encourage the formation of peer groups that understand about HIV and have more positive attitudes towards safer sex.²⁷ Conversely, young people who drop out of school are more likely to enter into adult sexual networks where older partners with more experience and power dictate the “rules” of sexual engagement.

Of course attendance in school is not always uniformly a good thing for girls. Sometimes schools are institutions that allow gender inequality and discrimination to thrive. They can become places that tolerate violence and sexual abuse, whether by older boys or by teachers. A recent report by ActionAid suggests that sexual violence within schools is a serious problem in a number of countries.²⁸

1.5 Summary

As we have seen, there has been an increasing feminisation of the AIDS epidemic in sub-Saharan Africa, especially among young women, who are two to seven times more likely to be HIV-positive than young men. There are a number of biological and social reasons why women are especially vulnerable to HIV infection. Many of these reasons relate to a lack of power in determining who to have sex with, and when and how to have sex.

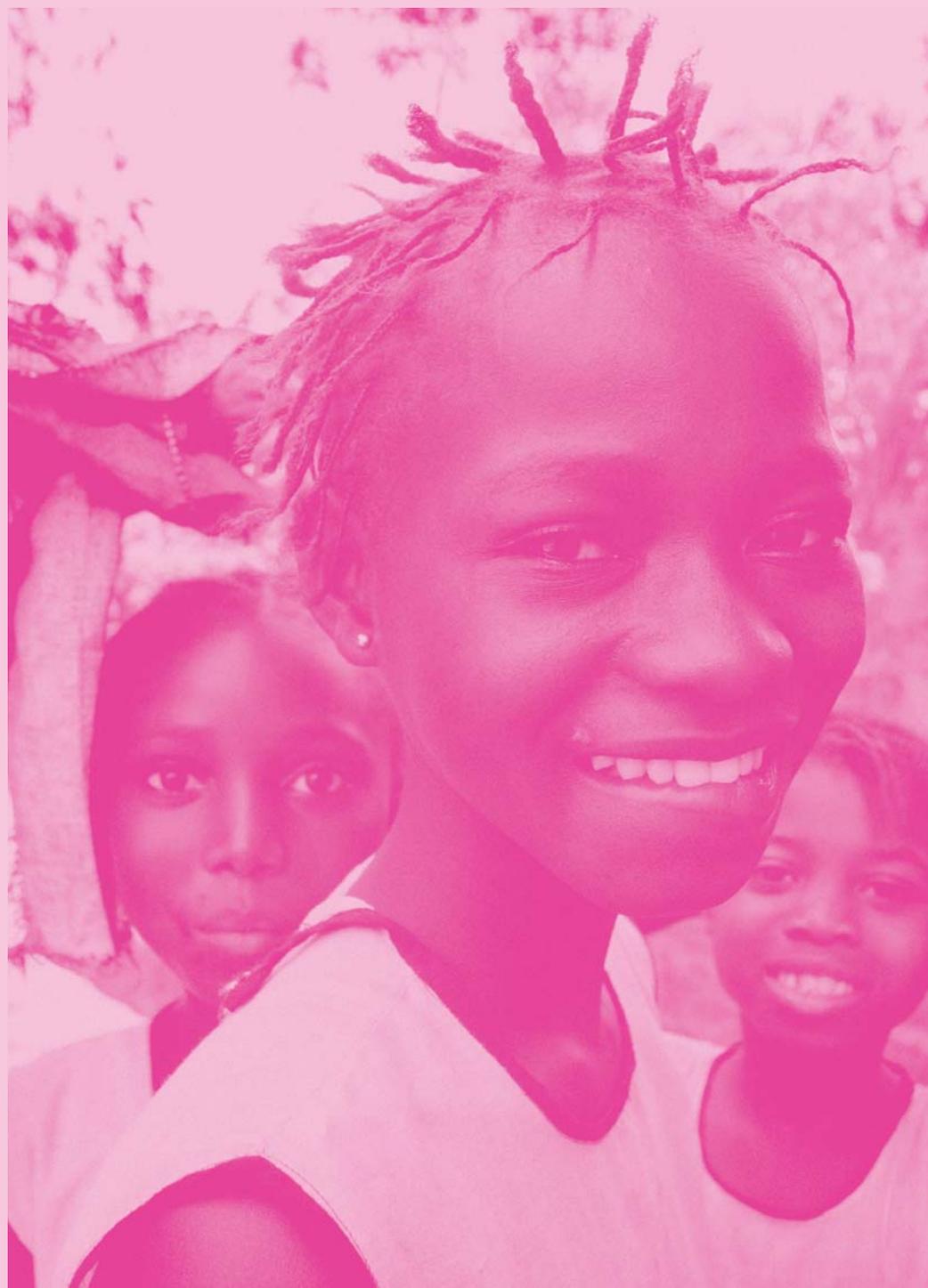
Girls' education can impact on the above factors through five hypothesised pathways: curriculum, psychosocial, power-related, economic and social/sexual networks. The impact of girls' education could work in either direction and can be summarised as follows:

At the moment, these are all hypothetical scenarios, but they provide us with a useful conceptual framework in which to situate the results from the review in Chapter 3.

Table 1 Pathways through which the education of girls and young women might affect their risk of HIV infection

	Attendance at school	Higher educational attainment
Increased risk of HIV	Potential gender discrimination or sexual abuse by older boys and teachers	Increased social and geographic mobility as a result of higher socio-economic status leads to engagement in more risky sexual networks
Decreased risk of HIV	Smaller sexual networks with young people of similar age who negotiate positive attitudes towards protective behaviours	Greater confidence to suggest safe sex practices such as condom use
	Higher levels of direct contact with HIV prevention campaigns	Greater capacity to negotiate safe sexual practice with partners
		Positive outlook for the future provides incentive to avoid HIV infection
		Higher socio-economic status leads to greater likelihood of STIs being treated or more able to buy condoms

A systematic review involves designing in advance a strategy and criteria to decide which type of studies will be included in the review. Extensive searches are then conducted to collate the available literature on the subject that meets the agreed criteria. In total, over 600 articles were identified and 45 met the inclusion criteria and were included in the review.



2.0 Methodology

Girls' education could have either a positive or negative impact on sexual behaviour, and consequently on HIV vulnerability. Both of these arguments have been used by a number of influential advocates. The last systematic review of the evidence, conducted in 2002, concluded that more highly educated individuals in Africa had higher levels of HIV infection. However, there was also some suggestion that this trend may be reversing over time.²⁹

Since 2002 a number of new studies have been carried out in this area. ActionAid therefore decided to conduct a new systematic that would build on the pre-existing data. This review included data published since 2002, and also added studies that examined the impact of girls' education on sexual behaviour.

A systematic review involves designing in advance a strategy and criteria to decide which type of studies will be included in the review. Extensive searches are then conducted to collate the available literature on the subject that meets the agreed criteria. A systematic approach to the review means that some studies might not meet the inclusion criteria and will therefore not be reviewed.

The first step was to determine the inclusion criteria for the review. The primary inclusion criteria was that studies must report on the association between, on the one hand, an indicator of education (such as school attendance, years of schooling or grade attained) and, on the other, indicators of sexual behaviour and/or prevalence or incidence of HIV infection. However, a number of other criteria were also applied, summarised in Table 2.

The research is restricted to central, eastern and southern Africa and, as such, it cannot be assumed that the findings will apply to western Africa or other regions of the world.

2.1.1 Systematic document search

As many articles were identified as possible by searching the major medical research databases (Embase and PubMed) using the combination of indexed search terms listed below as well as free text terms.

Any of the following:

- "sexual behaviour"
- "HIV prevalence"
- "HIV infections/epidemiology".

and any of the following

- "educational status"
- "unemployment"
- "employment"
- "social class"
- "socio-economic factors"

and

- "Africa, south of the Sahara".

In addition, the reference lists from the most relevant articles were used to identify further articles. This systematic search identified about 600 articles. Each of these abstracts was then reviewed. Those studies that included relevant data were reviewed in full. In total, 45 articles published between 1990 and 2006 met the inclusion criteria and were included in the review.

Excluded	Included
	Outcome variable = HIV prevalence or reported sexual behaviour Exposure variable = educational attainment or attendance in school
"Grey literature" from NGOs, UN agencies etc	Peer review articles in academic journals
Men only studies	Women only studies Studies on both men and women reported separately Studies on mixed sex groups as long as they also adjusted for gender
Purely descriptive studies (eg no adjustment for possible confounders such as age)	Results adjusted for the possible confounding effects of other variables (at the bare minimum: age, gender and setting) Studies that adjusted for factors on the causal pathway ('overadjusted') were also included, though this is not strictly appropriate
<500 individuals in the study	>500 individuals in the study
Sample drawn from high risk and minority groups	Sample broadly representative of the general population
Western and northern Africa	Southern, eastern and central Africa
Articles published before 1990	Articles published between 1990 and 2006

2.1.2 Limitations of the research

Although the aim of the review was to include only scientifically robust studies, many of the studies shared the following limitations:

- 1 Cross-sectional data: most of the studies were cross-sectional (ie, they only collected data at one point in time). It is therefore not possible to determine causality, as individuals might have differed before going to school. It is also not possible to know whether people became infected with HIV during or after leaving school.
- 2 Accuracy of information: as sexual behaviour is still a very taboo subject in many parts of the world, it is difficult to collect accurate information. There is always the possibility that people are not telling the truth. This may be particularly true for more educated people who may be more prone to reporting sexual behaviours on the basis of social desirability.
- 3 Lack of data to control for all confounding or pathway factors: very few of the studies examined possible confounding factors in any depth. It is particularly difficult to tease out the difference between economic status and educational attainment, as these two factors are highly inter-related. Richer individuals are more likely to stay in school for longer, and the longer they stay in school the richer they are likely to become.

Table 3 Studies meeting the inclusion criteria

Reference(s)	Study population	Study design	Country	National/regional	Year of data collection	Age range
Allen et al ¹⁰	Pre/post	CS	Rwanda	R	85-86	19-37
Glynn et al ¹¹	Pop	CS	Malawi	R	87-89	15+
Crampin et al ¹²	Pop, ANC	SCS	Malawi	R	88-00, 91-93, 98-01	15-54
Dallabeta et al ¹³	ANC	CS	Malawi	R	89-90	13-45
Chao et al ¹⁴	ANC	CS	Rwanda	R	89-91	<19->30
Kwesigabo et al ¹⁵	Pop	SCS	Tanzania	R	87, 93, 96	15-54
GPA ^{16,17}	Pop	CS	Multiple	N	89-91	15-49
De Walque ^{18,19}	Pop	CS, Coh	Uganda	R	90 to 00	13+
Barongo et al ⁴⁰	Pop	CS	Tanzania	R, U	90-91	15-54
Wannan et al ¹¹	ANC	CS	DR Congo	R	90-91	
Senkoro et al ¹²	Work	Coh	Tanzania	R	91 to 96	<25->45
Serwadda et al ¹³	Pop	CS	Uganda	R	89	15-59
Rakai ^{14,45}	Pop	CS	Uganda	R	90	13+
Djamba ¹⁶	Pop	CS	DR Congo	R	91	Mean 33yrs
Mwanza ^{17,48}	Pop	CS	Tanzania	R	91-92	15-54
Kilian et al ¹⁹	ANC	SCS	Uganda	R	91-94, 95-97	15-49
Rakai ¹⁰	Pop	CS	Uganda	R	92	13+
Mnyika et al ^{11,52}	Pop	CS	Tanzania	R	92	15-54
Lugoe et al ¹³	Students	CS	Tanzania	R	93	13-25
DHS ^{14,55}	Pop	CS	Multiple	N	93/98	15-49
Fylkesnes et al (I) ¹⁴	ANC	CS	Zambia	N	94	15-44
Morris et al ¹⁷	Pop	CS	Uganda	R	94	15-49
Rakai Trial ¹⁸	Pop	Coh	Uganda	R	94to99	15-49
Bloom et al ¹⁹	Pop	CS	Tanzania	R	94-95	18-59
Fylkesnes et al (II) ¹⁰	ANC	SCS	Zambia	N	94-98	15-39
	Pop	SCS	Zambia	N	96, 99	15-49
Meekers ¹¹	Pop	CS	Botswana	R	95	13-18
Fontanet et al ¹²	Work	CS	Ethiopia	R	95-96	
Kapiga ¹³	Pop	CS	Tanzania	N	96	15-49
Michelo et al ¹⁴	Pop	SCS	Zambia	R	96, 99, 03	15-49
Four cities study ^{15,56}	Pop	CS	Kenya	R	97-98	15-49
	Pop	CS	Zambia	R	97-98	15-49
Gregson et al (II) ¹⁷	Pop	CS	Zimbabwe	R	98	17-54M, 15-44F
Camlin ¹⁸	Pop	CS	South Africa	N	98	15-49
Magnani et al ¹⁹	Pop	CS	Zambia	R	98	10-24
Koenig et al ¹⁰	Pop	CS	Uganda	R	98-99	15+
Gregson et al (III & IV) ^{11,22}	Pop	CS	Zimbabwe	R	98-00	15-39
Mbulateye et al ¹³	Pop	CS	Uganda	R	99-00	13+
Kaufman et al ¹⁴	Pop	CS	South Africa	R	01	14-24

Key**Study population**

Pre/post Women from pre- and post-natal clinics
 ANC Ante-natal clinic attenders
 Work Workers
 Pop General population sample

Study type

CS Cross-sectional
 SCS Serial cross-sectional
 Coh Cohort

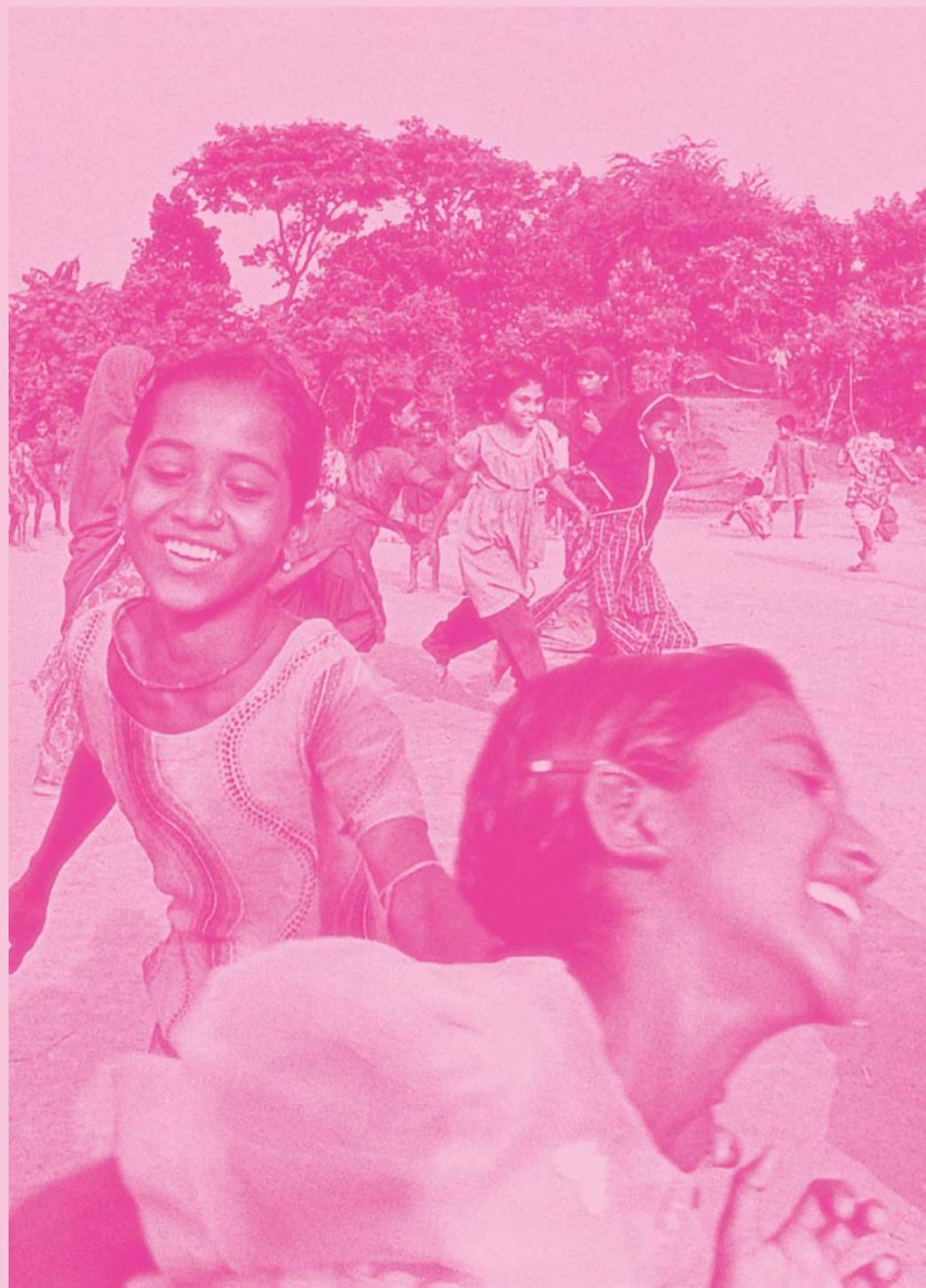
Regional/national

R Regional
 N Nationally representative

Year

xx-xx denotes years of a single data collection period; xx, xx denotes separate years of data collection; xx to xx denotes follow up period for a cohort study; xx/xx denotes multiple surveys conducted within the given period.

Findings suggest that the impact of girls' education on HIV is changing as the epidemic evolves. The evidence shows that, as the epidemic matures, the impact of girls' education reverses and starts having a positive impact.



This chapter summarises the key findings about the impact of education on HIV rates and sexual behaviour among women in eastern, southern and central Africa. In total, 45 articles met the strict inclusion criteria and were reviewed in full.

Education is either deemed to have a positive impact (more education, less risk), negative impact (more education, more risk) or no impact. Evidence regarding boys, secondary education and possible mechanisms is also discussed.

3.1 The impact of education on HIV rates

There were 15 articles, reporting on 13 separate populations of women. Of these:

- seven populations (reported in nine articles) showed a negative impact of education on HIV rates^{34,40,41,43-45,47,48,56,59} (including Rwanda, the Democratic Republic of Congo, Uganda, Tanzania and Zambia)
- four studies showed no impact of girls' education on HIV (Rwanda, Malawi, Tanzania, Zambia and South Africa)^{30,33,51,66}
- one study showed a positive impact of girls' education on HIV (Zimbabwe).⁷¹

An additional seven studies did not provide gender-disaggregated data but can be summarised as follows:

- three studies (Malawi, Uganda, Tanzania) showed a negative impact of education on HIV rates^{31,50,52}
- two studies showed no impact of education on HIV rates (Zimbabwe, Uganda)^{67,73}

- two studies showed a positive impact of education on HIV rates (Zimbabwe, Ethiopia).^{62,72}

At first glance, the results are confusing. In many ways, this is hardly surprising. The breadth of studies reviewed is extensive and spans 11 countries and data collected anytime between 1985 and 2001. The outcome variables, education systems, populations and ages are all different, making comparison highly complicated.

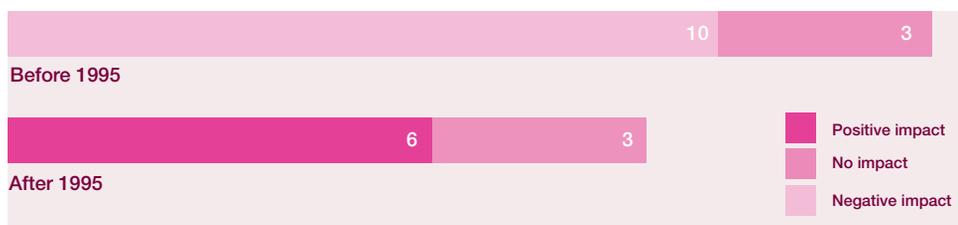
However, these initial studies seem to suggest that the more educated women are, the higher their risk of HIV (supporting the theory that more education leads to higher economic status, higher levels of mobility etc). If this is the case, does this mean that the many different organisations campaigning for girls' education as the 'social vaccine' against HIV might be misdirected?

The studies were reanalysed, considering the period in which they collected data to see if – like an evolving epidemic – the impact of education on HIV was also evolving. Figure 3 shows what happens if the studies are split according to whether the data were collected before or after 1995.

This evidence shows strongly that, before 1995, more education was related to higher HIV vulnerability. However, after 1995, more education was either not related to HIV vulnerability or was indicative of lower HIV vulnerability.

Given this finding, we decided to look at the few studies that examined the impact of education on HIV rates over time (either

Figure 3 Impact of education on HIV vulnerability according to studies before and after 1995



as cohort studies or serial cross-sectional surveys).^{32,35,49,60,64,38,42,58}

The results from the five serial cross-sectional surveys are summarised in Figure 4. (Please note that the results from the three cohort studies are not included). The graphs are striking and show that – with only one exception – for both sexes, the relationship between education and HIV is changing in the same direction: the negative impact of education on HIV (ie, more educated, more HIV) is weakening over time. This might be caused by decreasing HIV vulnerability among more educated groups^{49,60,64} and/or by increasing vulnerability in the least educated groups.^{60,32}

These findings suggest that the following is happening: although girls’ education may be linked to higher HIV vulnerability early in the HIV epidemic, this can be expected to change over time as the epidemic matures

with rising HIV vulnerability among uneducated groups and decreasing vulnerability among educated groups.

3.2 The impact of education on sexual behaviour

This section looks at the impact of girls’ education on sexual behaviour such as use of condoms, age of first sexual activity (or sexual debut) and number of current partners. This set of outcomes is more complicated to compare than data for HIV as the outcomes can be measured in a variety of ways. For example, surveys vary from asking about condom use during last sexual activity to condom use in the last six months, twelve months etc. To further complicate the analysis, it should be noted that these are reported sexual behaviours. It is impossible to know whether a person is telling the truth or saying something that sounds socially desirable.

Figure 4 Changing association between education and risk of HIV infection over time from serial cross-sectional data collected in Uganda, Zambia, Tanzania and Malawi



With this in mind, the sexual behavioural outcomes below have broadly been categorised as:

- age of sexual debut
- number of sexual partners
- condom use
- other characteristics of sexual relationships.

3.2.1 Age of sexual debut

There were seven articles that explicitly explored the link between young women's educational attainment and age of sexual debut.

- five of the seven articles showed a positive impact of education on sexual debut (more educated women started having sex later)^{54,55,66,71}
- the two remaining articles (Botswana, Zambia) showed no association.^{53,61,74}

There is also strong evidence that young women currently attending school are less likely to have had sex than those out of school.^{54,61,74} However, it cannot be assumed that girls who drop out of school then become sexually active. It is also possible that the relationship works in the opposite direction, and that girls who are more sexually active are more likely to drop out of school (because they become pregnant, for example). The three studies all cited the expulsion of pregnant girls from school as a common phenomenon, although policies vary from country to country.

Although these studies suggested that girls' attendance at school or higher levels of education may be related to later sexual debut, it is difficult to conclude whether or not schools positively impact on the age of sexual debut or whether sexually active girls are simply more likely to drop out of school. Longitudinal studies would be needed in order to answer this question.

3.2.2 Number of sexual and casual partners

It was difficult to deduce any clear trends from the data about how education impacts on the number of sexual/casual partners. Outcome variables were measured in a number of different ways, making comparison difficult. Some studies showed educated women were more likely to report having had sex with a non-regular partner in the last 12 months, but only if they lived in rural areas.^{54,55} On the other hand, in some studies, more highly educated women reported fewer sexual partners overall,^{60,66,69} while in other studies there was no association.^{66,71}

3.2.3 Condom use

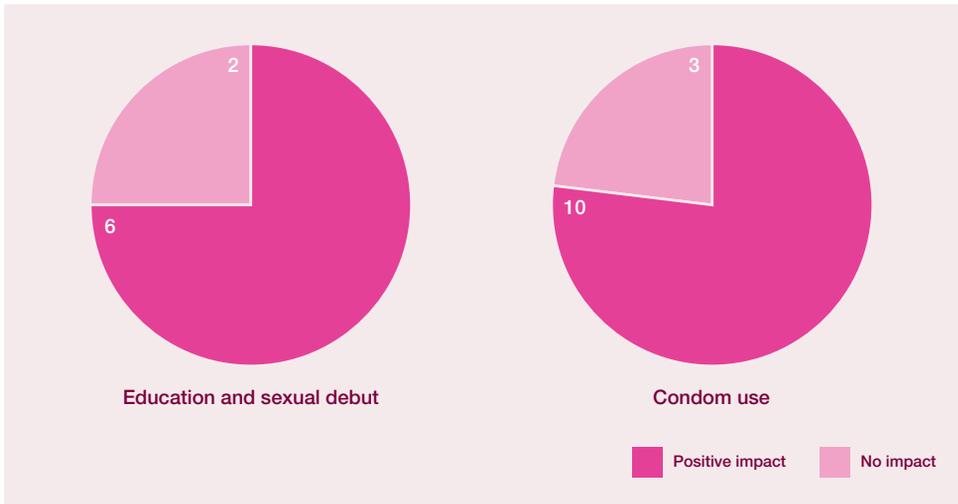
All the studies on the impact of girls' education on condom use showed strikingly similar findings and provided by far the most conclusive and powerful message: more girls' education increases the chances that young women use condoms. In total, 13 articles examined this question.

- ten articles showed a positive impact of education on condom use during sex (eight of these studies concerned women only)^{53,60,65,66,68,69,36,54,55,39}
- three articles showed no impact of girls' education on condom use.^{37,57,71}

Not a single study suggested that women with less education were more likely to use condoms. Interestingly, one study⁶² found the positive impacts of education on condom use to be inter-generational: young people who lived in a household with a more educated adult were more likely to use condoms than those living with less educated adults.

The remarkably similar findings across the studies demonstrates very clearly how girls' education can help women to negotiate safer sex. This finding also flies in the face of an increasingly vocal minority who are claiming that condoms do not work in Africa.

Figure 5 Number of articles reporting the association between education and sexual debut
 Figure 6 Number of articles reporting associations with condom use



3.2.4 Other characteristics of sexual relationships

The final set of articles looks at a number of relevant sexual behaviour characteristics such as coercive sex, sex with a commercial sex worker and transactional sex. Unfortunately, the number of studies for each outcome is too small to draw out any trends across studies. Instead a brief summary is given for each of the outcomes:

- **coercive sex:** one study showed that women with primary education were more likely to have experienced coerced sex than women with either secondary or no education (Uganda)⁷⁰
- **age difference between sexual partners:** one study showed that less education was associated with larger age gaps between partners,⁷¹ although another study suggested there was no association⁶⁶
- **men engaging in commercial sex:** two studies from 1989–1991 suggested that more highly educated men were more likely to have recently engaged in commercial sex,³⁷ although a more recent study found there to be no association⁶⁶

- **transactional sex:** data from a number of countries using the Demographic and Household Survey suggested that, in some places, more highly educated women were more likely to have received resources in exchange for sex (transactional sex), whereas in other places the opposite relationship was observed.⁵⁴ Another study in Kenya and Zambia looked explicitly at exchange of money for sex and found that more highly educated women were less likely to exchange money for sex.⁶⁶

3.3 Further issues arising from the review

To what extent is the impact of education on HIV and sexual behaviour the same for men and women? And what difference does primary or secondary schooling make?

3.3.1 Gender differences

Although this review focuses on girls' education, it is obviously also important to compare data between women and men. This way, it will be possible to know if education specifically reduces HIV vulnerability for women only, or for both sexes. In terms of HIV, there 10 ten articles that showed gender-disaggregated data by educational level.^{40,43,44,47,42,39,64,45,48,71}

- seven out of the ten articles showed that the impact of education on HIV rates did not differ between men and women^{40,43,44,47,42,39,64}
- the remaining three articles showed highly mixed results.

A similar analysis on the sexual behaviour outcomes showed that the impact of education on sexual behaviour was broadly similar for men and women. Given these findings, it seems that the impact of education on HIV vulnerability does not differ remarkably between men and women. So although this report focuses on girls' education, it should be noted that education has a similar impact on men's vulnerability to HIV. Obviously, any response to help women must also target men's sexual behaviour.

3.3.2 Primary versus secondary school

Does more education confer more benefits for women? We decided to study in more detail the subset of studies that showed education to have a positive impact on HIV vulnerability. Thirteen of the studies examined different

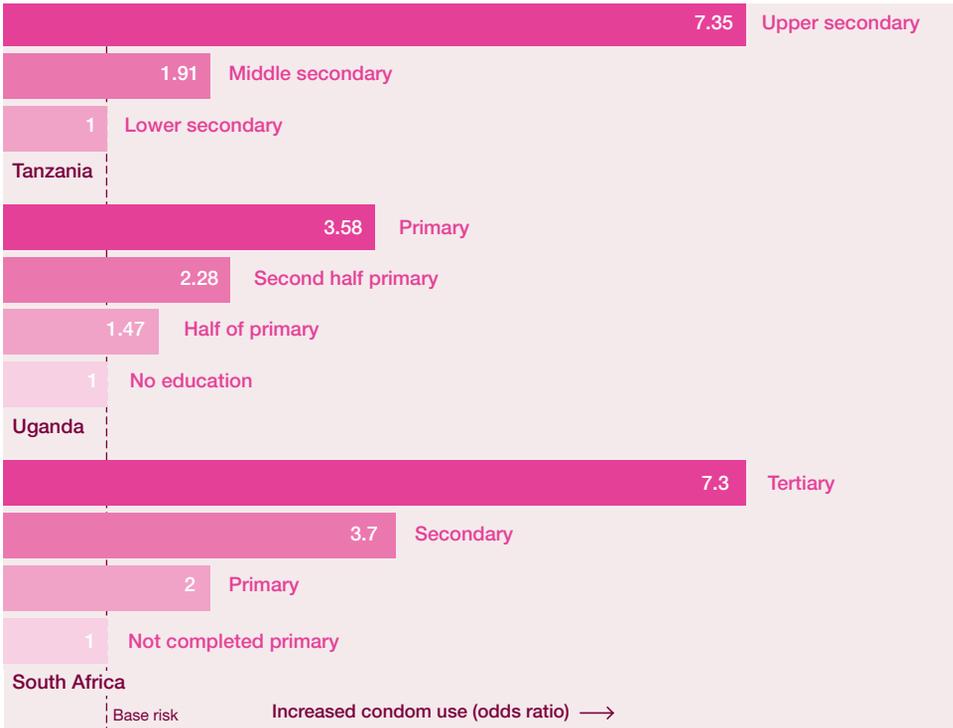
levels of education, of which only six differentiated the results by primary and secondary schooling.^{69,53,68,57,67,52}

The results from these six studies are shown in Figures 7 and 8. It seems that, in most cases, secondary education had a greater impact on reducing HIV vulnerability for women than primary education (evidenced by increased condom use and reduced HIV rates). Please note that these figures are those that are more relevant to young women.

Interestingly, in two of the studies a curvilinear relationship exists in which women with primary education are more likely to be HIV-positive than those with no education. It is not immediately clear why this might be the case. There are two possible scenarios. First, women with no education at all are likely to be the poorest women who are also unlikely to be mobile, therefore reducing their vulnerability to HIV. Under this scenario, it may be that women with a primary education have increased mobility, thus increasing their HIV

Figure 7 Impact of girls' education on HIV vulnerability





vulnerability. The other explanation is to do with the complex changing dynamics of the HIV epidemic in which the relationship could be explained by a differing balance of HIV infection and AIDS-related mortality. Because of the data limitations outlined earlier, the studies are not directly comparable as both the levels of education and the outcomes are measured differently. However, the graph is useful in showing the trends across the data.

3.4 Revisiting possible mechanisms

This review has been pivotal in showing how, as an epidemic matures, having more education will reduce your vulnerability to HIV. This is the case for both men and women, and it seems that the more education the better. The beneficial effects of education have been shown to work within an individual's lifetime but have also been passed through generations.

These findings are useful but do not quite go far enough. What is actually happening? What are the underlying mechanisms? Can we assume that more formal education is empowering young women to take control of their sexual lives? Or could it be through economics or social networks? Chapter 1 identified five possible pathways:

- 1 contact with school-based HIV and AIDS education
- 2 psychosocial benefits of girls' education
- 3 economic and lifestyle impacts of girls' education
- 4 power within sexual relationships
- 5 social and sexual networks.

To what extent did the articles discuss possible mechanisms? The answer is hugely important, as it will help us to identify where and how to target prevention efforts. Early in the epidemic, when more highly

educated women were more vulnerable to HIV, it is likely that the third pathway was the main mechanism through which education was impacting on HIV: that more highly educated people use their higher status and economic powers to have more sexual partners. In order to examine this hypothesis, the articles were reanalysed to see what the relationship was between education, economic status (measured through occupation or income) and migration. Through multivariate analysis, it was possible to see the relative strengths of these three factors in determining HIV vulnerability in 11 studies.

- five studies showed similar impacts of both education and economic status^{32,35,41,45,50}
- one study showed that education was more important than occupation in determining HIV vulnerability,³⁷ although two other studies showed economic status was more important^{33,67}
- three studies showed that mobility was more important than either education or economic status in determining HIV vulnerability.^{40,47,52}

These results are somewhat confusing and the small numbers involved makes it difficult to tease out which pathways are more important. The results suggest that higher economic status and greater mobility are linked to higher HIV rates, supporting the idea that it is partly through economic status and lifestyle choices that girls' education impacts on HIV risk. However, the impacts of socio-economic status and education are difficult to untangle and, since many of the studies are not longitudinal, it is not possible to determine causality. A strong possibility is that coming from a richer household means a girl stays in school longer and – independently – means she can protect herself from HIV. In this scenario, the effects of being in school may be confounding the underlying issue, which is poverty.

As the AIDS epidemic has matured, the opposite impact of education is taking place; more highly educated women have lower

vulnerability to HIV. Unfortunately, studies have rarely examined what the underlying mechanism for this might be. In general, there is a shocking dearth of evidence on why girls' education impacts on HIV vulnerability. The results from the impact of education on sexual behaviour suggest that more education impacts most strongly on increased condom use, so it is very possible that this is the reason why more educated women are now able to protect themselves from HIV. This still leaves us with little understanding as to how more education leads to more condom use in the first place. Some exploratory work in South Africa suggests that the creation of positive social networks in school might create enabling environments for condom use.⁷⁵ If this is the case, women will still need a certain level of power within sexual relationships in order to benefit from these social networks.

It is very important to understand what the mechanisms underlying the relationship between girls' education and HIV vulnerability might be. It is possible that there is nothing specific about being in school that affects HIV vulnerability. It could be that girls who stay longer in school come from different social backgrounds and that these background characteristics affect HIV rates. Some of the studies above did control for these background characteristics (eg economic status), which suggests that education is having an effect independently of economic status. In turn, this suggests that the impact of education is also operating through some of the psychosocial pathways. Identifying these mechanisms is hugely important in informing our prevention messages more broadly.

3.5 Summary

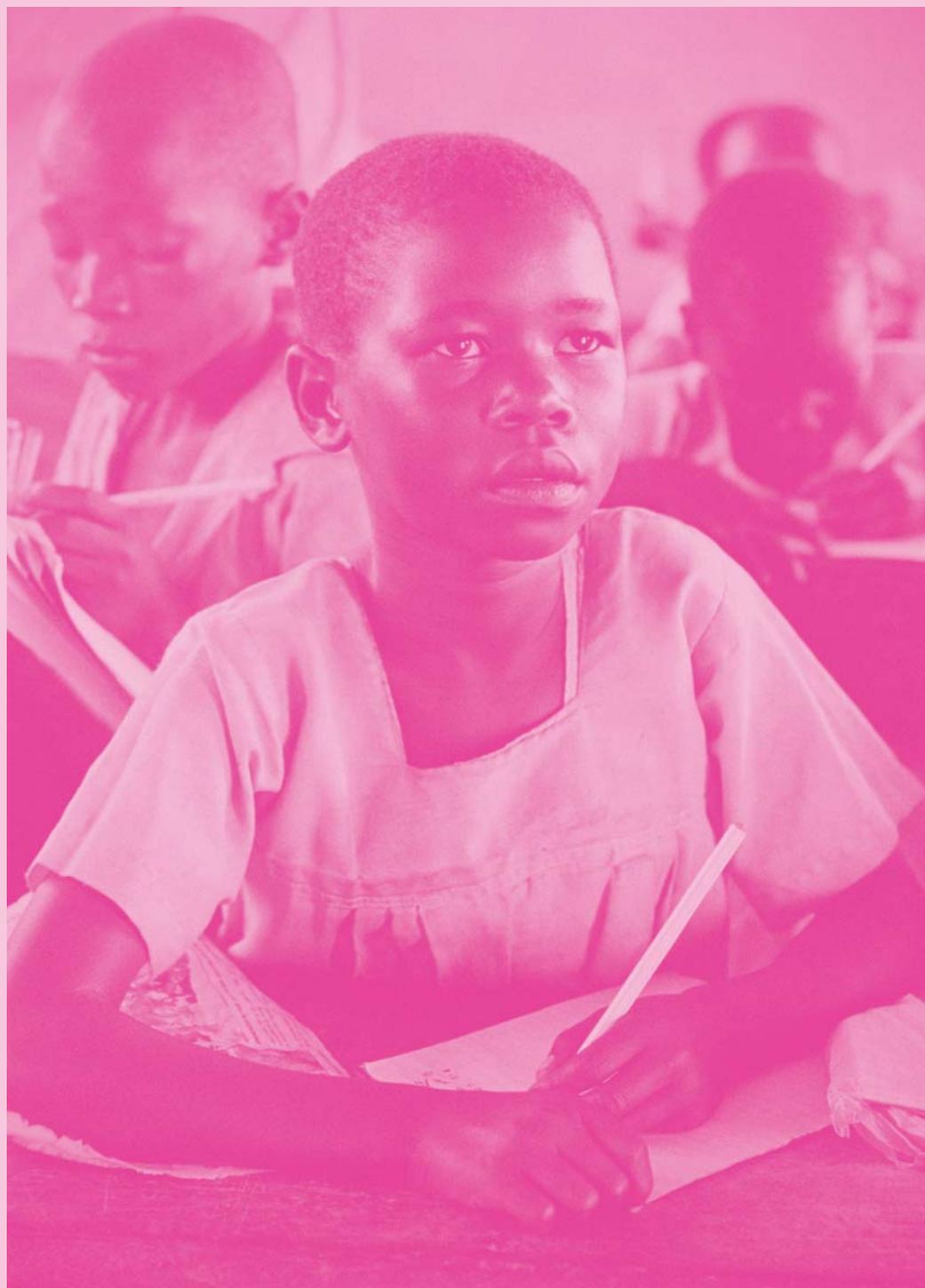
Early in the AIDS epidemic, higher levels of girls' education were associated with better economic prospects and more mobility. It is likely that these factors increased women's vulnerability to HIV.

However, as the epidemic has evolved, the relationship between girls' education and HIV has also changed. Now, more highly

educated girls and young women are more likely to be able to negotiate safer sex and reduce HIV rates. The more education the better – although even the most educated women are still vulnerable to infection. It is not certain what some of the underlying mechanisms might be, but the data on sexual behaviour suggests that increased condom use among more highly educated women might be the answer. However, even if the reason is through increased condom use, the question still remains, why are more educated women more able to negotiate safer sex? It may be through more positive attitudes towards condoms being fostered in social networks in school and/or more power and balance within relationships over how to have sex. Furthermore, if more highly educated women are changing their behaviour because of HIV then clearly HIV messages are also having an effect.

What seems to become clear is that education can play a key role in enabling girls and women to process and apply messages that they hear about HIV and AIDS. It is likely that girls outside of school do receive some of the same messages (eg through radio, religious groups etc), but education makes all the difference in giving girls and women the capacity to apply the messages in their own lives. The challenge now is to ensure that all girls have the opportunity to benefit from a high quality education.

The gap between the epidemic and the response is – in some countries – narrowing. This report shows that it is possible to stay ahead of the virus – but only when individuals (particularly women and girls) have the power to choose who they have sex with, and when and how they do so. Educating girls and women is one huge step towards turning around the AIDS epidemic in Africa.



Twenty five years since AIDS was first diagnosed, millions of people have lost their lives and millions more will do so. The virus continues to stay one step ahead of our understanding. One of the latest puzzles is the increasing feminisation of the epidemic: young women are particularly vulnerable to HIV – a staggering 74% of young people living with HIV in sub-Saharan Africa are female.

Girls and women are vulnerable to HIV simply because they do not have enough power to protect themselves from infection. In order not to be infected with HIV, a woman has to have control over who she has sex with, as well as when and how to have sex. The sad reality is that, in too many countries, only men have this power. For this reason alone, HIV prevention messages continue to fail as they fail to tackle women's sense of sexual powerlessness.

Despite this depressing and growing realisation, there are plenty of reasons to be hopeful. There is strong evidence that educated young people are taking the steps they need to protect themselves. The challenge lies in empowering all girls and women to take control of their own lives. And the best way to build their confidence and self-autonomy is undoubtedly through girls' education.

More highly educated girls and women are better able to negotiate safer sex. An increasing number of studies show that this may be having a real impact on HIV rates. The findings also suggest that the more education the better. There are also inter-generational benefits of education. More highly educated adults influence young women to take action to protect themselves from HIV infection. Moreover, more education enables boys and men to practise safer sex, thus reducing their own, and their partners', risk of infection.

However, just as the benefits of educating girls become more and more apparent, it is bitterly ironic that the vast majority of girls in Africa will never receive a primary or secondary education. Education is a fundamental human right, embedded in numerous international conventions and

treaties, regional charters and national constitutions. Yet over 115 million children are currently out of primary school⁷⁶ and many more drop out within the first few years. In most countries, it is girls who miss out most. A key reason for this lies in the fact that they have to pay to go to school.⁷⁷ This is a violation of the right to basic education and grossly unfair to poor children and girls – those who are also now most at risk of HIV. Countries that have abolished school fees in primary education have seen enrolment figures soar with gender gaps diminishing rapidly.

In order to get girls into school, abolishing school fees is a necessary step, but it is not enough on its own. Massive increases in funding are needed. An estimated \$10 billion is needed just to get all children into primary school.⁷⁸ The amounts needed for extending secondary education will add to this – though the key will always be for national governments to expand their own domestic investment in education and health.

Three decades into the AIDS epidemic and there are 13,500 new HIV infections every day. The epidemic is still one step ahead of us. The gap is narrowing and the evidence presented in this report shows that it is possible to catch up with it – but only when individuals (particularly women and girls) have the power to make their own sexual choices. Educating girls and women is one huge step towards turning around the AIDS epidemic.

Financing girls' education

Abolition of school fees is the single most powerful way to increase girls' access to schooling. When governments abolished school fees in Kenya, Tanzania and Uganda, an extra eight million children enrolled in primary school. But abolishing school fees is not as straightforward as it sounds. There is always a double cost to governments: the cost of replacing lost income and the cost of coping with massive surges in enrolment that require a substantive increase in the teaching force, numbers of classrooms and quantities of teaching materials.

At the World Education Forum in Dakar an important pledge was made by the international community that: “no country seriously committed to basic education will be thwarted in the achievement of this goal by lack of resources”. In response, the international community (spearheaded by the World Bank) created the “Fast Track Initiative” (FTI), which sounds good, but sadly to date has proved to be rather slow.

Many governments developed national education plans based on the agreed FTI framework – but donors have so far failed to come up with sufficient resources to fund these. This may change, with renewed momentum on aid after the G8 summit in 2005, but the FTI urgently needs to prove that it can deliver the coordinated, long-term and predictable aid that was promised.

In addition to increased donor funding, most countries need to increase their own domestic budgets on education. However, such increases can cause a conflict with overarching macroeconomic policies on fiscal austerity. Since 2004, ActionAid has been undertaking research on the negative impacts of IMF policies on education financing. In all eight countries studied the research showed that IMF policies both directly and indirectly impact on the number of teachers a country can hire, their contract terms and salaries. The golden rule for the IMF is that inflation must be kept low (often under 5%) and keeping to this means strict limits put on public spending (particularly on public sector wage bills). As teachers and health workers are the largest group of public sector workers, their jobs or salaries are the first to be cut. The impact of this is that countries cannot increase spending on education at the rate needed to get all girls into school, because to do so might have a mild inflationary effect.

Ministries of finance in many countries are presently placed in the impossible position of having to make choices between expanding the education sector and maintaining fiscal austerity. Even the FTI is not immune from these conditionalities. If governments want to be accepted to the funding mechanism, they

must sign up to these conditions, which contradict their commitment to increasing investment in education. The resulting tension is increasingly acknowledged to be hampering efforts in developing both education and health systems, as shown by the following quote at a recent World Bank/UNICEF workshop on school fee abolition:

“Teacher supply and remuneration stand out as a particularly thorny set of issues that place two short-term imperatives in competition: macroeconomic stability as a prerequisite for growth and the urgency of vigorously pursuing the Millennium Development Goals related to education.”

**UNICEF School Fee Abolition Workshop,
Nairobi 2006**

A fine balance needs to be struck by weighing up the macroeconomic implications of expanding education and health sectors, and the consequences of not educating children for their own health and the health of future generations.

4.1 Recommendations

4.1.1 Reducing young women's vulnerability to HIV

As the HIV and AIDS epidemic matures, young women who are more highly educated are in a better position to act upon HIV prevention messages. However, HIV prevention messages that solely target certain behaviours rather than the causes of behaviour are limited in scope. The reality is that many women in sub-Saharan Africa have little control over who they have sex with, or when and how they have sex.

- prevention messages need to address power dynamics within relationships, thus providing choices that are realistic to young women and young men
- in addition, the scope of HIV prevention efforts should be widened to address underlying gender inequality. Approaches such as ActionAid's *Stepping stones* or STAR, which combine education on gender dynamics as well as HIV, should be encouraged

- all schools should provide comprehensive sexual health education with a special focus on HIV and family planning
- promoting condoms is a message that is working among young people and should be encouraged as the evidence shows condoms are reducing HIV vulnerability among this age group in sub-Saharan Africa.

Sexual violence is an extreme manifestation of gender inequality and should not be tolerated in schools.

- schools must adopt zero tolerance towards sexual violence and towards teachers having sexual relationships with students
- schools should foster gender equality, promote positive role models and challenge negative stereotyping.

Teenage pregnancy is a problem in many African schools, reflecting young women's vulnerability to HIV.

- schools need to respond to the problem of teenage pregnancy by providing comprehensive sex education to reduce pregnancy and improve sexual health
- schools should also provide measures to allow teenage mothers to return to education. Policies to exclude pregnant young women contradict the Education for All goals, and make young women more vulnerable to HIV infection.

Schools have a dual role in preventing HIV, both by providing vital information on HIV but also by empowering young women to take control of their sexual lives.

- the education sector response to HIV needs to be prioritised within the multisectoral response
- educational opportunities for girls need to be expanded significantly both in terms of primary education and secondary education.

4.1.2 Meeting international commitments on education

- All forms of school fees in primary education should be abolished and governments should plan for the increases in enrolment that will follow, recruiting more professional teachers to ensure class sizes do not soar
- donors should fill the immediate resource gap in the Fast Track Initiative (\$510 million) and fulfil their promises in filling the long-term gap of \$10 billion. All FTI funding must be long-term and predictable, committed over ten years
- the IMF should stop imposing macroeconomic conditionalities and limits on public sector wage bills that prevent the fulfilment of education goals. Governments should be open about the trade-offs and sacrifices they are forced to make when agreeing low-inflation/low-spending approaches with the IMF
- there should be a complete cancellation of debt for the poorest countries and debt swaps for education and other social sector spending
- ministries of finance should be encouraged to factor into their decision-making the long-term economic growth that will come from investments in basic education and the long-term loss of growth that will come from failing to provide a comprehensive response to HIV and AIDS.

4.1.3 Recommendations for research

Despite the increasing feminisation of the HIV and AIDS epidemic, this review has highlighted a dearth of studies that focus on young women. In addition:

- research on HIV should always be gender-disaggregated, showing separate results for men and women, and where possible for young people too
- there is an urgent need for longitudinal studies that follow young people over a period of time in order to understand the mechanisms through which young people become vulnerable to HIV
- more research is needed on the links between pregnancy, schools and HIV vulnerability
- more systematic reviews need to be conducted in order to build upon evidence that already exists, rather than reinventing the wheel
- more research is needed on the progressive benefits of education: how much education leads to how much protection?

- 1 Kelly M. The potential contribution of schooling to rolling back HIV and AIDS. Commonwealth Youth and Development, 2006.
- 2 Global Campaign for Education. Learning to survive. How Education for All would save millions of young people from HIV/AIDS, 2004.
- 3 Glynn JR, Carael M, Auvert B, et al. Why do young women have a much higher prevalence of HIV than young men? A study in Kisumu, Kenya and Ndola, Zambia. *Aids* 2001;15 Suppl 4:S51–60.
- 4 UNAIDS. Report on the global HIV/AIDS epidemic. Geneva: UNAIDS, 2004.
- 5 Gregson S, Garnett GP. Contrasting gender differentials in HIV-prevalence and associated mortality increase in eastern and southern Africa: artefact of data or natural course of epidemics. *AIDS* 2000;14 (suppl 3):S85–S99.
- 6 Macphail C, Williams B, Campbell C. Relative risk of HIV infection among young men and women in a South African township. *International Journal of STD and AIDS* 2002;13:331–342.
- 7 Pettifor AE, Rees HV, Kleinschmidt I, et al. Young people's sexual health in South Africa: HIV prevalence and sexual behaviors from a nationally representative household survey. *AIDS* 2005;19(14):1525–34.
- 8 Campbell C, Macphail C. Peer education, gender and the development of critical consciousness: participatory HIV prevention by South African youth. *Social Science and Medicine* 2002;55:331–345.
- 9 Gregson S, Nyamukapa CA, Garnett GP, et al. Sexual mixing patterns and sex-differentials in teenage exposure to HIV infection in rural Zimbabwe. *Lancet* 2002;359(9321):1896–903.
- 10 Kelly RJ, Gray RH, Sewankambo NK, et al. Age differences in sexual partners and risk of HIV-1 infection in rural Uganda. *Journal of Acquired Immune Deficiency Syndromes* 2003;32(4):446–51.
- 11 Luke N. Confronting the 'sugar daddy' stereotype: age and economic asymmetries and risky sexual behavior in urban Kenya. *International Family Planning Perspectives* 2005;31(1):6–14.
- 12 Royce RA, Sena A, Cates W, Jr., Cohen MS. Sexual transmission of HIV. *N Engl J Med* 1997;336(15):1072–8.
- 13 Garcia-Moreno C, Watts C. Violence against women: its importance for HIV/AIDS. *AIDS* 2000;14 Suppl 3:S253–65.
- 14 Aggleton P. Sexuality, HIV Prevention, Vulnerability and Risk. *Journal of Psychology and Human Sexuality* 2004;16(1):1–13.
- 15 Boler T. The sound of silence. London: ActionAid 2003.
- 16 Badcock Walters P, Boler T. Education Sector Global Readiness HIV and AIDS Survey. Policy Implications for education and development. London: ActionAid, 2004.
- 17 Marmot M. Self esteem and health. *British Medical Journal* 2003;327(7415):574–5.
- 18 Case A, Deaton A. School inputs and educational outcomes in South Africa. *Quarterly Journal of Economics* 1999;114(3):1047–1084.
- 19 Luke N. Age and economic asymmetries in the sexual relationships of adolescent girls in sub-Saharan Africa. *Studies in Family Planning* 2003;34(2):67–86.
- 20 Varga CA. Sexual decision-making and negotiation in the midst of AIDS: youth in Kwazulu Natal, South Africa. *Health Transition Review (supplement)* 1997;7:45–67.
- 21 Gilbert L, Walker L. Treading the path of least resistance: HIV/AIDS and social inequalities – a South African case study. *Social Science and Medicine* 2002;54(7):1093–110.
- 22 Kaufman C, Stavrou SE. "Bus fare, please": The economics of sex and gifts among adolescents in urban South Africa. New York: Population Council, 2002.
- 23 MacPhail C, Campbell C. 'I think condoms are good but, aaai, I hate those things': condom use among adolescents and young people in a Southern African township. *Social Science and Medicine* 2001;52:1613–1627.
- 24 Wellesley Centers for Research on Women. Unsafe schools: a literature review of school-related gender-based violence in developing countries.

Washington D.C.: USAID, 2003.

- 25 Doherty IA, Padian NS, Marlow C, Aral SO. Determinants and consequences of sexual networks as they affect the spread of sexually transmitted infections. *Journal of Infectious Diseases* 2005;191 Suppl 1:S42–54.
- 26 Campbell C. "Letting them die". Why HIV/AIDS prevention programmes fail. Oxford: James Currey, 2003.
- 27 Gregson S, Terceira N, Mushati P, Nyamukapa C, Campbell C. Community group participation: can it help young women to avoid HIV? An exploratory study of social capital and school education in rural Zimbabwe. *Social Science and Medicine* 2004;58(11):2119–32.
- 28 ActionAid. Stop violence against girls. Johannesburg: ActionAid International, 2004.
- 29 Hargreaves JR, Glynn JR. Educational attainment and HIV-1 infection in developing countries: a systematic review. *Tropical Medicine and International Health* 2002;7(6):489–98.
- 30 Allen S, Lindan C, Serufulira A, et al. Human immunodeficiency virus infection in urban Rwanda. Demographic and behavioral correlates in a representative sample of childbearing women. *Journal of the American Medical Association* 1991;266(12):1657–1663.
- 31 Glynn JR, Ponnighaus J, Crampin AC, et al. The development of the HIV epidemic in Karonga District, Malawi. *AIDS* 2001;15(15):2025–9.
- 32 Crampin AC, Glynn JR, Ngwira BM, et al. Trends and measurement of HIV prevalence in northern Malawi. *AIDS* 2003;17(12):1817–25.
- 33 Dallabetta GA, Miotti PG, Chiphangwi JD, et al. High socioeconomic status is a risk factor for human immunodeficiency virus type 1 (HIV-1) infection but not for sexually transmitted diseases in women in Malawi: Implications for HIV-1 control. *Journal of Infectious Diseases* 1993;167(1):36–42.
- 34 Chao A, Bulterys M, Musanganire F, et al. Risk factors associated with prevalent HIV-1 infection among pregnant women in Rwanda. National University of Rwanda-Johns Hopkins University AIDS Research Team. *International Journal of Epidemiology* 1994;23(2):371–80.
- 35 Kwesigabo G, Killewo J, Godoy C, et al. Decline in the prevalence of HIV-1 infection in young women in the Kagera region of Tanzania. *Journal of Acquired Immune Deficiency Syndromes* 1998;17(3):262–268.
- 36 Carael M. Sexual Behaviour. In: Cleland J, Ferry B, eds. *Sexual behaviour and AIDS in the developing world*. London: Taylor & Francis, 1995.
- 37 Deheneffe J-C, Carael M, Noubbissi A. Socioeconomic determinants of sexual behavior and condom use. *Confronting AIDS: Public priorities in a global epidemic*. New York: Oxford University Press, 1998.
- 38 De Walque D. How does the impact of an HIV/AIDS information campaign vary with educational attainment? Evidence from rural Uganda. Chicago: University of Chicago, 2002.
- 39 De Walque D, Nakiyingi-Miiri JS, Busingye J, Whitworth JA. Changing association between schooling levels and HIV-1 infection over 11 years in a rural population cohort in south-west Uganda. *Tropical Medicine and International Health* 2005;10(10):993–1001.
- 40 Barongo LR, Borgdorff MW, Mosha FF, et al. The epidemiology of HIV-1 infection in urban areas, roadside settlements and rural villages in Mwanza Region, Tanzania. *AIDS* 1992;6(12):1521–1528.
- 41 Wannan GJ, Cutting WA, Fischer PR. HIV seroprevalence amongst pregnant women in northeastern Zaire. *International Journal of STD and AIDS* 1997;8(5):317–9.
- 42 Senkoro K, Boerma JT, Klokke A, et al. HIV incidence and HIV-associated mortality in a cohort of factory workers and their spouses in Tanzania, 1991 through 1996. *Journal of Acquired Immune Deficiency Syndromes* 2001;23:194–202.
- 43 Serwadda D, Wawer MJ, Musgrave SD, Sewankambo NK, Kaplan JE, Gray RH. HIV risk factors in three geographic strata

- of rural Rakai District, Uganda. *AIDS* 1992;6(9):983–989.
- 44 Smith J, Nalagoda F, Wawer MJ, et al. Education attainment as a predictor of HIV risk in rural Uganda: Results from a population-based study. *International Journal of STD and AIDS* 1999;10(7):452–459.
 - 45 Konde-Lule JK, Wawer MJ, Sewankambo NK, et al. Adolescents, sexual behaviour and HIV-1 in rural Rakai district, Uganda. *AIDS* 1997;11(6):791–9.
 - 46 Djamba YK. Premarital sexual experience of married women in Kinshasa, Zaire. *Journal of Biosocial Science* 1995;27(4):457–66.
 - 47 Grosskurth H, Mosha F, Todd J, et al. A community trial of the impact of improved sexually transmitted disease treatment on the HIV epidemic in rural Tanzania: 2. Baseline survey results. *AIDS* 1995;9(8):927–934.
 - 48 Quigley M, Munguti K, Grosskurth H, et al. Sexual behaviour patterns and other risk factors for HIV infection in rural Tanzania: A case-control study. *AIDS* 1997;11(2):237–248.
 - 49 Kilian AH, Gregson S, Ndyanabangi B, et al. Reductions in risk behaviour provide the most consistent explanation for declining HIV-1 prevalence in Uganda. *AIDS* 1999;13(3):391–398.
 - 50 Kirunga CT, Ntozi JP. Socio-economic determinants of HIV serostatus: a study of Rakai District, Uganda. *Health Transition Review* 1997;7 Suppl:175–188.
 - 51 Mnyika KS, Klepp KI, Kvale G, Ole-King'ori N. Risk factors for HIV-1 infection among women in the Arusha region of Tanzania. *Journal of Acquired Immune Deficiency Syndromes* 1996;11(5):484–491.
 - 52 Mnyika KS, Klepp KI, Kvale G, Nilssen S, Kissila PE, Ole-King'ori N. Prevalence of HIV-1 infection in urban, semi-urban and rural areas in Arusha region, Tanzania. *AIDS* 1994;8(10):1477–1481.
 - 53 Lugoe WL, Klepp KI, Skutle A. Sexual debut and predictors of condom use among secondary school students in Arusha, Tanzania. *AIDS Care* 1996;8(4):443–52.
 - 54 Blanc AK. *The Relationship Between Sexual Behavior and Level of Education in Developing Countries*, 2001.
 - 55 Filmer D. *The socioeconomic correlates of sexual behavior: A summary of results from an analysis of DHS data. Confronting AIDS: Public priorities in a global epidemic*. New York: Oxford University Press, 1998.
 - 56 Fylkesnes K, Masonda RM, Kasumba K, et al. The HIV epidemic in Zambia: Socio-demographic prevalence patterns and indications of trends among childbearing women. *AIDS* 1997;11(3):339–345.
 - 57 Morris M, Wawer MJ, Makumbi F, Zavisca JR, Sewankambo N. Condom acceptance is higher among travelers in Uganda. *AIDS* 2000;14(6):733–41.
 - 58 Gray RH, Li X, Kigozi G, et al. Increased risk of incident HIV during pregnancy in Rakai, Uganda: a prospective study. *Lancet* 2005;366(9492):1182–8.
 - 59 Bloom SS, Urassa M, Isingo R, Ng'weshemi J, Boerma JT. Community effects on the risk of HIV infection in rural Tanzania. *Sexually Transmitted Infections* 2002;78:261–266.
 - 60 Fylkesnes K, Musonda RM, Sichone M, Ndhlovu Z, Tembo F, Monze M. Declining HIV prevalence and risk behaviours in Zambia: evidence from surveillance and population based surveys. *AIDS* 2001;15:907–916.
 - 61 Meekers D, Ahmed G. Contemporary patterns of adolescent sexuality in urban Botswana. *Journal of Biosocial Science* 2000;32(4):467–85.
 - 62 Fontanet AL, Woldemichael T, Sahlu T, et al. Epidemiology of HIV and Schistosoma mansoni infections among sugar-estate residents in Ethiopia. *Annals of Tropical Medicine and Parasitology* 2000;94(2):145–55.
 - 63 Kapiga SH, Lugalla JL. Sexual behaviour patterns and condom use in Tanzania: results from the 1996 Demographic and Health Survey. *AIDS Care* 2002;14(4):455–69.
 - 64 Michelo C, Sandoy IF, Fylkesnes K. Marked HIV prevalence declines in higher educated young people: evidence from population-based surveys (1995–2003) in

- Zambia. *Aids* 2006;20(7):1031–8.
- 65 Lagarde E, Carael M, Glynn JR, et al. Educational level is associated with condom use within non-spousal partnerships in four cities of sub-Saharan Africa. *AIDS* 2001;15(11):1399–408.
- 66 Glynn JR, Carael M, Buve A, et al. Does increased general schooling protect against HIV infection? A study in four African cities. *Tropical Medicine and International Health* 2004;9(1):4–14.
- 67 Gregson S, Mason PR, Garnett GP, et al. A rural HIV epidemic in Zimbabwe? Findings from a population-based survey. *International Journal of STD and AIDS* 2001;12(3):189–196.
- 68 Camlin CS, Chimbwete CE. Does knowing someone with AIDS affect condom use? An analysis from South Africa. *AIDS Education and Prevention* 2003;15(3):231–44.
- 69 Magnani RJ, Karim AM, Weiss LA, Bond KC, Lemba M, Morgan GT. Reproductive health risk and protective factors among youth in Lusaka, Zambia. *Journal of Adolescent Health* 2002;30(1):76–86.
- 70 Koenig MA, Zablotska I, Lutalo T, Nalugoda F, Wagman J, Gray R. Coerced first intercourse and reproductive health among adolescent women in Rakai, Uganda. *International Family Planning Perspectives* 2004;30(4):156–63.
- 71 Gregson S, Waddell H, Chandiwana SK. School education and HIV control in sub-Saharan Africa: from discord to harmony? *Journal of International Development* 2001;13(4):467.
- 72 Coffee MP, Garnett GP, Mlilo M, Voeten HA, Chandiwana S, Gregson S. Patterns of movement and risk of HIV infection in rural Zimbabwe. *Journal of Infectious Diseases* 2005;191 Suppl 1:S159–67.
- 73 Mbulaiteye SM, Mahe C, Ruberantwari A, Whitworth JA. Generalizability of population-based studies on AIDS: a comparison of newly and continuously surveyed villages in rural southwest Uganda. *International Journal of Epidemiology* 2002;31(5):961–7.
- 74 Kaufman CE, Clark S, Manzini N, May J. Communities, opportunities, and adolescents' sexual behavior in KwaZulu-Natal, South Africa. *Studies in Family Planning* 2004;35(4):261–74.
- 75 Hargreaves JR. The social epidemiology of HIV infection: a study among unmarried young people in rural South Africa in 2001: University of London, 2006.
- 76 UNESCO Institute of Statistics. *Children out of school*, 2005.
- 77 Tomasevski K. *Free or fee? Right to education Global Report 2006*, 2005.
- 78 HM Treasury. *Keeping our promises: delivering education for all*. London: HM Treasury and DfID, 2006.

Picture credits:

Cover Jenny Matthews/ActionAid,
Liba Taylor/ActionAid
Page 8 Gideon Mendel/Corbis/ActionAid
Page 18 Jenny Matthews/ActionAid
Page 24 Mahmud/Map/ActionAid
Page 34 Gideon Mendel/Corbis/ActionAid

Design: Ranch

ActionAid International is a unique partnership
of people who are fighting for a better world
– a world without poverty.

ActionAid International

PostNet Suite #248, Private Bag X31,
Saxonwold 2132, Johannesburg,
South Africa

Telephone

+27 (0) 11 880 0008

Fax

+27 (0) 11 880 8082

Email

mail.jhb@actionaid.org

Website

www.actionaid.org

International Secretariat

Johannesburg

Asia Office

Bangkok

Africa Office

Nairobi

Americas Office

Rio de Janeiro

ActionAid International is registered as a
foundation in Haaglanden, the Netherlands,
under file number 27264198