Prevention of HIV in Women and Girls Depends on Strengthening the Enabling Environment

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Introduction

For more than 25 years AIDS has been taking a ravaging global toll. Women now make up half of those living with HIV infection. In sub-Saharan Africa—the region most affected by HIV/AIDS—women account for nearly 60 percent of those living with HIV (UNAIDS, 2008). While it appears that national epidemics in Africa are stabilizing (Steinbrook, 2008), gender inequalities and biological differences still make women and girls especially vulnerable to the epidemic. As global attention is focusing on the unique vulnerabilities of women and girls, identifying which interventions work specifically to protect and care for them becomes vitally important. With scarce resources and growing demand for services, program priorities must be based on effective interventions.

For HIV/AIDS interventions for women and girls to succeed, factors outside the health services need to be addressed. These environmental factors—gender norms that guide how girls and boys grow to be women and men, legal norms that confer or withhold rights for women and girls, access to education, income, levels of toleration for violence against women, experience of HIV/AIDS and gender stigma and discrimination—could determine whether any HIV intervention will truly help women and girls. Experts have noted that strengthening the enabling environment must be done at a structural level (Gupta et al., 2008). Furthermore, structural interventions need a multi-pronged strategy, as well as political will and commitment at all levels, as evident, for example, in Uganda in the 1990s (Wellings et al., 2006: 39). What evidence exists that addressing the enabling environment can lead to successful HIV and AIDS-related outcomes?

This paper reviews 63 successful and promising interventions to strengthen the enabling environment for women and girls, based on a more extensive review of interventions for women and girls related to all aspects of HIV and AIDS programming (Gay et al., 2010). The paper 1)

reviews the challenges in measuring outcomes related to strengthening the enabling environment; 2) describes the successful interventions among seven components of a strengthened enabling environment, namely, women's legal rights, employment opportunities, income, access to education, violence, traditional gender norms, and stigma and discrimination, and strengthening women's leadership; and 3) provides recommendations for strengthening the enabling environment.

Methodology

Measuring what works

Measuring what works is complicated since the outcomes and impacts of interventions depend on a number of biological and proximate determinants (Boerma and Weir, 2005). Understanding the epidemiology of HIV, how it is spread and who is at risk is critical for developing and evaluating successful interventions (Chin, 2007). Measuring the effect of interventions to strengthen the enabling environment is a challenge. Operating in specific socioeconomic, cultural (including gender), and demographic settings, interventions, such as counseling and testing, must affect "proximate determinants" such as number of concurrent partners, condom use, blood safety practices, etc., which must act through biological determinants (exposure, efficiency of transmission per contact and duration of infectivity) to affect HIV transmission. "The distinction between underlying and proximate determinants is important for the conceptualization of pathways through which underlying determinants, including interventions, may affect infection" (Boerma and Weir, 2005: S64).

Thus, when interventions are determined to work, they have been shown to work through a pathway to affecting HIV – or at least a proximate determinant, such as partner reduction or condom use. For example, the pathway from changing gender norms to women being able to

refuse sex or insist on condom use is indirect and can be influenced by many other factors. Studies of the enabling environment tend to be cross sectional, without control groups.

Search methodology

To search for relevant interventions that had been evaluated, SCOPUS[1] searches were conducted for 2005-2009, using the search words HIV or AIDS and wom*n, and other specific terms. Earlier material was captured using Popline and Medline. In addition, the gray literature was captured through review of key websites, including UN agencies, WHO, The Cochrane Collaboration; OSI; ICRW; PSI; The Population Council; ICW; World Bank; FHI; AIDStar I, and the Guttmacher Institute. In addition, experts were consulted on each topic.

Limitations

This analysis contains some limitations. Unsuccessful interventions are not published. Many worthwhile interventions do not have sex-disaggregated data or are not thoroughly evaluated, still others are not published in peer-reviewed journals or are not published at all. The search methodology focused on public health literature and thus likely missed important material from other fields, such as the legal literature and the education literature.

Rating the strength of evidence

Evidence was rated, to the extent possible, using the Gray Scale (Gray, 1997), which lists five levels of evidence.[2] Some abstracts from the 2008 International AIDS Conference have been included, but have not been given a Gray scale rating due to lack of detail available to apply

[1]Scopus is the largest abstract and citation database of peer-reviewed literature and quality web sources with smart tools to track, analyze and visualize research (http://info.scopus.com/scopus-in-detail/facts/)

[2] One weakness of the Gray scale is prioritizing randomized controlled trials, as randomized controlled trials are "primarily a vehicle for evaluating biomedical interventions, rather than strategies to change human behavior. Altering the norms and behaviors of social groups can sometimes take considerable time…." (Global HIV Prevention Working Group, 2008: 12). Furthermore, randomized controlled trials are not always ethical or appropriate for certain HIV interventions and therefore should not be the only factor in judging the relative weight of any particular study. Furthermore, many HIV prevention programs that address key issues in novel, context-specific ways are often not rigorously evaluated (Gupta et al., 2008a).

the rating. In cases where a majority of the evidence, and particularly strong evidence, exists for an intervention, this was listed in each section as "what works." Criteria set for "what works" were strongly rated studies (Gray I, II or III) for at least two countries and/or five weaker studies across multiple settings. "Promising" included studies that were strongly rated but in only one setting or a number of weaker studies in only one country.

Table 1. Gray Scale of the Strength of Evidence

Type	Strength of evidence
I	Strong evidence from at least one systematic review of multiple well designed, randomized controlled trials.
II	Strong evidence from at least one properly designed, randomized controlled trial of appropriate size.
III	Evidence from well-designed trials without randomization: single, group, pre-post, cohort, time series, or matched case-control studies.
IV	Evidence from well-designed, non-experimental studies from more than one center or research group.
V	Opinions of respected authorities, based on clinical evidence, descriptive studies or reports of expert committees.

Where structural interventions cannot be linked as directly with impact on HIV infection, judgment has been exercised on categorizing "what works," and "promising" interventions. Where an intervention could have both positive outcomes for women and negative outcomes, this was noted. For example: microcredit can reduce HIV-related risk behaviors (Pronyk et al., 2008), but it could also increase violence against women if the intervention is not carefully designed and appropriate to local contexts (Schuler et al., 1998).

Findings

Scope of the Evidence

The evidence of what works and what is promising to strengthen the enabling environment includes 63 evaluations grouped under 27 general interventions. Of those 27, eleven fall under the category of what works, while 16 are promising. The evidence comes from 22 countries, more than half (14) in Africa, two in East/South East Asia, two in South Asia, three in Latin America and the Caribbean, one in Eastern Europe and one in Oceania (Table 2). Most evidence falls under Gray III (Evidence from well-designed trials without randomization: single, group, pre-post, cohort, time series, or matched case-control studies), although the "what works" category includes seven studies rated Gray I or II.

Table 2. Number of Studies Supporting What Works and Promising Interventions for Strengthen the Enabling Environment, by Topic

Topic	Number of studies supporting What Works/Promising Interventions	Countries represented	Strength of evidence					
			I	II	III	IV	V	Abs +
Transforming gender norms	11	7		1	9	1		
Addressing violence against women	11	4		2	7	1	1	
Transforming legal norms to empower women, including marriage, inheritance and property rights	5*	3 +1 regional			1	2	1	1
Promoting women's employment, income and livelihood opportunities	7	5		1	2	1	1	2
Advancing education	11*	11 +1 multi-country	1	1	3	2	4	
Reducing stigma and discrimination	14	12		1	9	3	1	
Promoting women's leadership	4	13					4	
Total	**63**		**1**	**6**	**31**	**10**	**12**	**3**

+ Abs = abstract from 2008 International AIDS Conference
***The topics of legal reform and education did not receive the same systematic review of the legal and education literature that health related topics received in the public health and HIV/AIDS literature, thus these studies should not be considered as a complete set of the evidence..**

The following interventions and supporting evidence demonstrate a number of ways to strengthen the enabling environment for women and girls and tackle the underlying roots of

women's greater vulnerabilities to HIV and AIDS. This section focused on interventions that have been shown to work. Promising interventions are also included in Table 3.

Table 3. HIV and AIDS Interventions to Strengthen the Enabling Environment for Women and Girls, Outcomes and Countries Represented

W or P*	Intervention	Outcome	Countries represented
Transforming gender norms			
W	Training, peer, partner discussions, community-based education	Increase HIV protective behaviors	Botswana, Tanzania, South Africa, Brazil, and India
W	Mass media campaigns as part of comprehensive and integrated services	Increase HIV protective behaviors	Brazil, Nicaragua
P	Changing norms	Reduce acceptability of concurrent partnerships	Zimbabwe
Addressing violence against women			
W	Community-based participatory learning approaches involving women and men	create more gender-equitable relationships and decrease violence	Kenya, South Africa
W	Establishing comprehensive post-rape care protocols which include PEP	Improve services for women	South Africa
W	Microfinance programs, integrated with participatory training on HIV, gender, and violence	Reduction in gender-based violence	South Africa
P	Training teachers about gender-based violence	Change norms about acceptance of gender-based violence	Ghana, Malawi, South Africa
P	Multi-media health promotion	Increase awareness of violence against women	South Africa
P	Integrating HIV prevention into services for abused women	May increase condom use	South Africa
Transforming Legal Norms to Empower Women, including Marriage, Inheritance and Property Rights			
W	Enforcing laws that allow widows to take control of remaining property	Increase widows' ability to cope with HIV	
P	Community organizing	Help women pursue their legal rights	Kenya, Zimbabwe
P	Integrating legal services into health care	Help ensure that women retain their property	Zambia
Promoting Women's Employment, Income and Livelihood Opportunities			
W	Increased employment opportunities, microfinance, or small-scale income-generating activities	Reduce behavior that increases HIV risk, particularly among young people	East and Southern Africa
P	Access to treatment	Rapid increase in employment and income for people living	India

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W or P*	Intervention	Outcome	Countries represented
		with HIV.	
P	Engagement of trained women living with HIV	Positively impact workplace HIV policies	India
Advancing Education			
W	Increasing educational attainment	Help reduce HIV risk among girls	Burkina Faso, Ethiopia, Ghana, Malawi, South Africa, Zambia, Zimbabwe, and multi-country analysis
W	Abolishing school fees	Enables girls to attend (or stay in) school	Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda
Reducing Stigma and Discrimination			
W	Community-based interventions that provide accurate information about HIV transmission	Reduce HIV stigma and discrimination	Vietnam, Thailand, Bosnia and Herzegovina
W	Training for providers	Reduce discrimination against people with HIV/AIDS	Vietnam, China, and India
P	Couple and family counseling, in addition to individual counseling for people living with HIV	Reduce stigma within households	India
P	Implementation of non-discriminatory workplace policies	May reduce stigma and discrimination	Nepal, Thailand
P	Recruited opinion leaders	Reduce stigmatizing behaviors in the community	China
P	Support groups for people living with HIV in IDP camps, along with VCT and counseling	May reduce stigma	Kenya
P	Support to voluntarily disclose positive serostatus	Increases HIV + people's ability to cope and access treatment and reduces perceived stigma in the community	Australia, Botswana, India, Kenya, South Africa, Thailand, Uganda, Zambia, and Zimbabwe
Promoting Women's Leadership			
P	Investment in women's groups, especially positive women's networks	Policy engagement and change to better meet women's health and human rights needs	Botswana, Kenya, Namibia, Tanzania, Zimbabwe
P	Formation of a separate women's network within PLHA networks	May empower women living with HIV	India
P	Training on human rights for people living with HIV	Increase protection of their rights.	Angola, Botswana, DRC, Malawi, Mauritius, Mozambique, Namibia, Swaziland, Tanzania,

Table 3. HIV and AIDS Interventions to Strengthen the Enabling Environment for Women and Girls, Outcomes and Countries Represented

W or P*	Intervention	Outcome	Countries represented
			Zambia

*W=works, P=promising

Transforming Gender Norms

The social issues women face that make them particularly vulnerable to HIV are related to gender norms that privilege men over women in most societies, although evidence is mounting that gender norms harm both women's and men's health (Barker et al., 2007). Gender norms influence all program areas related to HIV/AIDS, from prevention of HIV, to treatment, care and support. In sexual relationships, women often lack power to protect themselves, including refusing sex and using condoms (Songbandith et al., 2008; Dover and Levy, 2008), even when they know their partners are involved in other sexual relationships (Ngema et al., 2008). Women are less likely to have access to resources and more likely to depend on men for financial survival for themselves and their children.

In many settings, men tend to be socialized to be less inclined than women to engage in health seeking behavior and men are frequently neglected in program efforts (Esplen, 2007; Zhou, 2008; Seth et al., 2008). Ideas that equate masculinity with sexual risk-taking and being in control of women have been associated with less condom use, more partners, more casual partners and more transactional sex (Greig et al., 2008; Harrison, 2008).

Interventions to change gender norms are developed on the premise that gender norms, which are passed on by families, peers, and institutions, among others, and are interpreted and internalized by individuals, can be changed. Eight programs have shown results through training, peer and partner discussions and community-based education about changing gender norms. For

example, a randomized control trial evaluation of the Stepping Stones[3] program for young people in one province of South Africa found that the program was effective in reducing sexual risk taking and violence perpetuation among young, rural men. Men reported fewer partners, higher condom use, and less transactional sex, perpetration of intimate partner violence, and substance use. Women in the intervention arm had 15% fewer new HIV infections than those in the control arm and 31% fewer HSV 2 infections, although neither was significant at the 5% level (Jewkes et al., 2008). Among the women, there was an increase in transactional sex (Jewkes et al., 2006b).

Also in South Africa, the One Man Can campaign, by Sonke Gender Justice Network, which implemented a range of communication strategies to shift social norms about men's roles and responsibility, provided training and engaged in advocacy and worked with local government, resulted in men's increased utilization of VCT and increased use of condoms in addition to more equitable attitudes about gender (Colvin, 2009). An impact evaluation of Program H, undertaken by PROMUNDO in Brazil, which began with intensive group sessions with young men to encourage reflection on what it means to be a man, found that the program resulted in significantly smaller percentages of young men supporting inequitable gender norms over time. While no significant change was found in condom use, those boys who reported that they had more equitable gender norms as measured by the Gender Equitable Male (GEM) scale also reported a decrease in STI symptoms. Furthermore, reinforcing these messages on the community level has additional positive impacts (Pulerwitz et al. 2006). The Yaari Dosti program in India, based on Program H in Brazil, resulted in a significant increase in report of

[3] Stepping Stones is a gender transformative approach designed to improve sexual health through building stronger and more gender-equitable relationships among partners, including better communication. Stepping Stones uses participatory learning approaches to increase knowledge of sexual health, and build awareness of risks and the consequences of risk taking. (Jewkes et al., 2006b).

condom use at last sex, decreased partner violence and increased support for gender equitable norms (Verma et al., 2008).

In India, a participatory group education intervention found that the young women significantly shifted to more gender equitable attitudes and reported using condoms at last sex (50% following the intervention as compared to 15% prior to the intervention (Khandekar et al., 2008). In Tanzania, evaluation of a community-based HIV and violence program for young men that combined community-based drama and peer education, found that the project resulted in significant changes in attitudes and norms related to gender roles and partner violence and some risk behaviors, including condom use. Men in the intervention community were significantly more likely to have used a condom during their last sexual experience, were significantly less likely to report that violence against women is justified under various scenarios (Maganja et al., 2007).

Mass media campaigns concerning gender equality as part of comprehensive and integrated interventions can increase HIV protective behaviors, as shown in Nicaragua in a project using a weekly telenovela, a radio call in show, community-based activities, visits to schools, youth training camps and informational materials. Participants with greater exposure to the intervention had a 44% greater probability of having used a condom during last sex with a casual partner and that men with greater exposure had a 56% greater probability of condom use with casual partners during the past six months (Solarzano et al., 2008). Program H in Brazil also included a mass media component. A quasi-experimental study, which followed three groups of young men ages over time, compared the impact of different combinations of program activities, including interactive education for young men led by adult male facilitators and a community-wide social marketing campaign to promote condom use as a lifestyle that used

gender-equitable messages that reinforced the messages promoted in the education sessions. The program resulted in significantly smaller percentages of young men supporting inequitable gender norms over time (Pulerwitz et al. 2006).

Addressing Violence Against Women

Violence, in addition to being a human rights violation, has been clearly demonstrated as a risk factor for HIV (Stephenson, 2007; Jewkes et al., 2006a; Manfrin-Ledet and Porche, 2003; Dunkle et al., 2004; Quigley et al., 2000b; Silverman et al., 2008). Women worldwide experience a wide variation across countries in the prevalence of physical or sexual violence by their current husband or partner, from around 15 to 75 percent (USAID, 2008a; Ellsberg et al., 2008). Abusive men are more likely to have other sexual partners unknown to their wives (Campbell et al., 2008a). Furthermore, "violence or fear of violence from an intimate partner is an impediment (to) or a consequence of HIV testing" (Campbell et al., 2008b: 2). Children who are sexually abused are more at risk as adults of acquiring HIV (Slonim-Nevo and Mukuka, 2007).

Community-based participatory learning approaches involving men and women can create more gender-equitable relationships, thereby decreasing violence. Evaluation of the Stepping Stones program in South Africa found that the program was effective in reducing sexual risk taking and violence perpetuation among young men. Men reported fewer partners, higher condom use, and less transactional sex, perpetration of intimate partner violence and substance use (Jewkes et al., 2008). The One Man Can Campaign in South Africa resulted in men's positive attitude shifts regarding gender based violence. Pre- and post-test surveys showed positive changes toward gender equitable attitudes that would assist HIV prevention:

prior to the workshop, 63% of the men believed that it is acceptable for men to beat their partners; after the workshop, 83% disagreed with the statement; prior to the workshop, 96% of the men believed that they should not interfere in other people's relationships, even if there is violence; after the workshop, all believed they should interfere (Colvin, 2009).

Microfinance programs can lead to reduction in gender-based violence when integrated with participatory training on HIV, gender, and violence. Using a cluster-randomized trial in rural South Africa, the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) intervention combined a microfinance program with participatory training on understanding HIV infection, gender norms, domestic violence, and sexuality, which resulted in a reduction in experience of physical or sexual violence by an intimate partner. After two years, the risk of past-year physical or sexual violence by an intimate partner was reduced by more than half. The study could not demonstrate in the short term an impact on HIV risk (Pronyk et al., 2006). However, the findings indicate that economic and social empowerment of women can contribute to reductions in intimate partner violence and that targeting structural determinants of HIV and intimate partner violence is possible (Kim et al., 2007b; Croce-Galis, 2008).

Establishing comprehensive post-rape care protocols, which include PEP, can improve services for women. Implementation of an intervention consisting of establishing a sexual violence advisory committee, instituting a hospital rape management policy, training for providers, centralizing and coordinating post-rape care in a designated room and community awareness campaigns in South Africa resulted in increased use of services and better quality of care, including treatment and referral for clients (Kim et al., 2007a; Kim et al., 2009a).

A project in Kenya instituted provision of occupational PEP and non-occupational PEP between 2001 and 2006. Use of PEP for occupational exposure was much higher than for non-

occupational PEP. In another intervention in Kenya, following the introduction of comprehensive post-rape care services, the reporting of rape was ten times higher in the following three months at Thika District Hospital (Taegtmeyer et al., 2006).

A qualitative study was conducted in Kenya to better understand the reasons for the low uptake of post-rape care services in health facilities and to establish perceptions of sexual violence in Kenya. Blurred boundaries between forced and consensual sex emerged. Important implications for the delivery PEP after sexual violence include the need for gender-aware patient-centered training for health providers and for HIV PEP interventions to strengthen on-going HIV prevention counseling efforts (Kilonzo et al., 2008a).

Transforming Legal Norms to Empower Women, Including Marriage, Inheritance and Property Rights

In many of the countries where women are most at risk for acquiring HIV, laws to protect women are weak (Mukasa and Gathumbi, 2008; Ezer et al., 2006; Ezer et al., 2007). Laws which reinforce the subordinate status of women by denying women the right to divorce, the right to own property, the ability to enter into contracts**,** to sue and testify in court**,** to consent to medical treatment and to open a bank account affect the legal rights of women (Ezer et al., 2006; Ezer et al., 2007), which may make a woman less likely to leave an abusive situation that may place her at risk of HIV acquisition. In some countries, people living with HIV have little access to the formal legal system (Kalla and Cohen, 2007). Women need knowledge of the legal rights that are in place and women living with HIV particularly need knowledge of their rights (Jurgens and Cohen, 2007). In some countries, women are excluded from the decision-making process in land disputes as men hold the vast majority of seats in institutions that adjudicate land rights (FIDA Kenya and Georgetown University Law Center, 2009).

For both women and men, gender norms are codified through public policy in a range of issues (Barker et al., 2010). Many countries use mixed systems in which customary and religious laws often exist as components of legal civil or common legal systems. These mixed domains can incorporate discriminatory views against women. Nigeria, for example, has three legal systems with three rivaling jurisdictions: common law, customary law, and Sharia (Muslim) law (JuriGlobe, 2009). A study by UNIFEM found that the three systems make it difficult to protect women's rights. Customary courts were found particularly problematic because they "administer 'justice' based on local social norms, beliefs and practices, resulting in significant variation in customary law and its implementation from one locality to another… to the disadvantage of women" (UNIFEM, 2006). These sorts of nuances should be taken into account in any legal reform process.

An overview of 40 organizations working at a national level on property and inheritance rights, based on a survey of 60 community- based organizations in East and Southern Africa suggests that where women's property and inheritance rights are upheld, women acting as heads and/or primary caregivers of HIV/AIDS-affected households are better able to mitigate the negative economic and social consequences of AIDS. The review found that legislation, litigation and education are needed: promoting gender sensitive legislation and a legislative framework that protects women's human rights; activities enhancing the judicial sector's capacity to uphold women's rights and provide for effective litigation; and activities that advance public awareness, understanding, and application of women's rights (Strickland, 2004).

Promoting Women's Employment, Income and Livelihood Opportunities

Women's economic dependence on men and unequal access to resources, including land and income-generating opportunities, increases the likelihood of women and girls engaging in a

variety of unsafe sexual behaviors including transactional sex, coerced sex, earlier sexual debut, and multiple sexual partners, and thus increases their risk of becoming infected with HIV (Gillespie and Kadiyala, 2005). Economic dependence also drives women to accept men's multiple partnerships (Hebling and Guimaraes, 2004). Independent sources of income and employment for women may allow women to insist on safe sex (Phinney, 2008) and to refuse sex to men who refused to wear condoms (Susser and Stein, 2000). The International Community of Women (ICW) network has found that "the most commonly expressed need from women in sub-Saharan Africa is support and training on establishing income-generating projects in the hope that they can earn income which will alleviate the difficulties they face in their day to day lives" Manchester, 2004: 95).

Increased employment opportunities, microfinance, or small-scale income-generating activities can reduce behavior that increases HIV risk, particularly among young people. Secondary analysis of data in South Africa from IMAGE (Pronyk et al., 2006) found that after two years of follow-up, young women ages 14 to 35 who had received microfinance loans to establish small businesses, along with training on gender and HIV, were more likely to have accessed VCT and less likely to have had unprotected sex at last intercourse, as well as being more likely to have had more communication concerning HIV with sexual partners and others (Pronyk et al., 2008). In Zimbabwe, the nine-month-long SHAZ! program provided 16 to 19 year-old poor, out-of-school girls just outside of Harare with an integrated microcredit, HIV education and behavior change program and resulted in increased HIV knowledge, increased equity in relationships, and condom use but low rates of loan repayment and business success. Zimbabwe's weak economy was blamed for the economic failures (Lukas, 2008).

In Haiti, a microfinance project that provided loans to HIV-positive and HIV-negative women following evaluation and training on business development. Of the women, 85% reported that the loans had improved their life conditions. Loan repayment was high: 93% for HIV-negative women and 82% for women living with HIV (Deschamps et al., 2008). Four years after an income-generating HIV prevention project for youth was initiated in Ewo, Republic of Congo, a follow up inquiry found that 24% of the youth were still involved in income generating activities. Youth reported that, for those who continued with the income-generating activities, these activities provided them with money and, for some, skills training, which for the girls especially, reduced their dependency on others. Few (5%) reported having sexual intercourse with a new sexual partner without using a condom and this was significantly lower in those currently involved in income generating activities. The youth noted four dimensions of income generating activities that are reported to be important for reducing susceptibility to HIV: the revenue they earned, the control/autonomy it brings to their lives, the training and new skills and the occupation of time in useful activity. Mobility and exposure to non-familiar adults in insecure forms of activity may counter some of these beneficial effects (Boungou, 2007).

A time-usage study that analyzed data on education, work, and organized activities among youths ages 14-22 in two South African districts found that employment opportunities decreased the odds of sexual activity among girls and higher wages for both boys and girls were associated with increased condom use. For example, girls were about one-third less likely to have had sex in the last year in communities where youth generally made more money from working and were almost two and a half times more likely to report having used a condom. Boys living in communities with higher employment and wage rates were 50% more likely to report having used a condom (Kaufman et al., 2002).

Advancing Education

Analysis by the Global Campaign for Education estimates that seven million HIV infections in young people could be averted in a decade, if all children completed primary school (Global Campaign for Education, 2004, cited in UNAIDS et al., 2004). The effectiveness of education as an HIV prevention strategy, which the World Bank calls the "window of hope," rests upon two key components: (1) greater access to schooling and (2) using schools as a natural place to reach young people with AIDS education and life skills training (World Bank, 2002). Education of girls is also associated with delayed marriage and childbearing, lower fertility, healthier babies, and increased earning potential.

Yet girls face barriers to staying in school, including lack of money needed for school funds, uniforms, textbooks and supplies, among other items, including uniforms and shoes and even pressure from their parents to marry (Kasente, 2003). Furthermore, lack of sanitary facilities has been hypothesized to influence girls' and teachers' school attendance during menstruation (Adams et al. 2009). Further interventions are needed to eliminate these barriers and enable girls to stay in school.

A systematic review explored the time trends in the association between educational attainment and risk of HIV infection in sub-Saharan Africa and found that HIV infections appear to be shifting towards higher prevalence among the least educated, reversing previous patterns. Studies on data collected prior to 1996 generally found either no association or the highest risk of HIV infection among the most educated. Studies conducted from 1996 onwards were more likely to find a lower risk of HIV infection among the most educated (Hargreaves et al., 2008a).

A study of key findings from nationally representative surveys conducted among young people in Burkina Faso, Ghana, Malawi, and Uganda found that formal education was positively associated with protective behaviors such as delaying first sex, abstaining from sex and using

condoms (Biddlecom et al., 2007). A study in South Africa showed that in multivariable survival analysis, one additional year of education reduced the hazard of acquiring HIV by 7% net of sex, age, wealth, household expenditure, rural vs. urban/periurban residence, migration status and partnership status (Bärnighausen et al., 2007). A household survey of women in South Africa who were sexually experienced but only had one lifetime partner (typically considered "low risk" for HIV) found that women who had not completed high school were more likely to be HIV-positive by odds of 3.75 than those who had completed high school. (Pettifor et al., 2008a). A study in Ethiopia of VCT clients found that male and female VCT clients with more than secondary level education are 58% and 66% (respectively) less likely to be HIV-positive than those with no education (Bradley et al., 2007).

Abolishing school fees can enable girls to attend (or stay in) school. A 2009 World Bank and UNICEF study evaluated the impact of primary school fee abolition in five African countries. Ethiopia abolished primary school fees in 1994, Ghana in 1995, Kenya in 2003, Malawi in 1994, and Mozambique began implementation in 2004. Fees were abolished in all countries for grades 1 through 7, with several countries extending the fee abolition to higher grades. Fee abolition resulted in a 23% increase in total enrolment ranging between 12% in Mozambique (2003/04 to 2004/05) to a 51% increase from 1993/94 to 1994/95 in Malawi. The ratio of girls to boys enrolled in primary school increased in Ethiopia from 0.61 girls to 1 boy in 1994/95 to a ratio of 0.79 girls to 1 boy in 2004/2005. The increase in the ratio of girls to boys was insignificant in the other countries (The World Bank and UNICEF, 2009). Furthermore, since 2003 when school fees were abolished in Kenya, girls in schools with free uniforms had a 10% decrease in childbearing and a 12% decrease in teen marriage (Duflo et al., 2006).

Reducing Stigma and Discrimination

Stigma and discrimination have been identified as tremendous barriers to addressing HIV/AIDS (Mann, 1999; Paxton et al., 2004 and 2005; Parker and Aggleton, 2002; Brouard and Willis, 2006). Stigma affects prevention behaviors, test-seeking, care-seeking, quality of care provided to HIV-positive clients, and perceptions and treatment of people living with HIV and AIDS by communities and families (Brown et al., 2003). Women are often considered to face the double stigma and discrimination associated with HIV and their inferior status to men in society (Armistead et al., 2008; Zelaya et al., 2008; Mupenda et al., 2008: Hong et al., 2004: Nguyen et al., 2009: 146). HIV-positive women often must "balance the stigma of being HIV-positive with the reality that childbearing is often their only route to social status and economic support" (Nyblade et al., 2003: 51). Yet, many studies of stigma and discrimination do not collect sex-disaggregated data, making it difficult to determine differential experiences that men and women face (Brown et al., 2003).

Community-based interventions that provide accurate information about HIV transmission (especially that casual contact cannot transmit the virus) can significantly reduce HIV stigma and discrimination. An intervention in two communities in Vietnam, where stigma was so strong that no one was open about their HIV status, led to a significant increase in awareness of stigma, reduction in fear of becoming infected with HIV through casual contact with HIV-positive people and stigma and intentions concerning stigmatizing behavior. Better, more complete knowledge of how HIV was not transmitted translated into a greater degree of acceptance of people living with HIV and their family members. The intervention included sensitization of community leaders by providing knowledge on HIV and meeting people living with HIV. Exposure to multiple activities led to greater increases in stigma reduction. However,

the intervention was less effective in reducing blame toward HIV-positive people, especially sex workers and IDUs (Nyblade et al., 2008).

Between 2004 and 2006, a project in Thailand that paired HIV-positive with an HIV-negative partner to receive loans to create a small business found that HIV-negative partners reported greater willingness to participate in activities with HIV-positive people. People living with HIV who participated in the project reported improvements in quality of life, as well as in their economic, social, physical and mental well being. In addition, 91% of the loans have been repaid on time. Both partners, mostly women, needed training in basic business skills (UNAIDS, 2007; Wolf et al., 2008).

In Bosnia and Herzegovina an intervention with rural school children ages 12-15 that increased knowledge on HIV transmission via bodily fluids decreased the fear of socializing with HIV-positive people from 46% at baseline to under 13% by the end of project surveys (Pancic, 2008).

Training for providers, including emphasis on safe health care practices, can reduce discrimination against people with HIV/AIDS in health care settings. A study in Vietnam at a hospital with 70% female workers, that compared training of hospital workers on HIV and universal precautions, along with testimonials from people living with HIV and training that included those components and added a half day training on social stigma co-facilitated by people living with HIV found that both interventions were successful in reducing discriminatory behaviors and hospital practices, with the additional half day training on stigma resulting in a greater impact on reducing discrimination and stigma. For example, the hospital workers who had additional stigma training were 2.3 times less likely to report placing signs on beds indicating HIV status than hospital workers without the stigma training. Having hospital policies

in place reduced stigma (Oanh et al., 2008). Training for service providers in county hospitals Yunnan, China resulted in a stronger belief in patient confidentiality, reduced fear of people living with HIV and better knowledge and practice of universal precautions (Li et al., 2008). Training for health workers in India also resulted in less stigmatizing and discriminatory treatment. Following training, a significantly greater proportion of doctors reported that they always arranged pre-test counseling (from 31% to 46%) and post-test counseling (56% to 69%). Following training, more doctors wore gloves (64% to 93%) and more ward staff wore gloves to carry blood samples (29% to 93%) (Mahendra et al., 2006).

Promoting Women's Leadership

Strengthening women's NGOs and women leaders who can mobilize in-country efforts in the interests of women and girls who are affected by HIV is critical. Women living with HIV want substantial and meaningful involvement in policy and program design and implementation, rather than just to be included as honorary speakers or advisory members. Few organizations recognize HIV-positive women's right to involvement (Paxton et al., 2004). HIV and AIDS programs need more women involved in leadership positions – particularly HIV-positive women and women with relevant skills (ICW, 2004). However, programs also need to recognize that it is difficult for women living with HIV or AIDS to participate unless their basic needs are met. Positive women need to earn an income and, consequently, have little time or energy available to volunteer with PLHA organizations. Many are widows with children to support. Of the 764 HIV-positive people interviewed in the Asia Pacific Network of People Living with HIV/AIDS (APN+) documentation of AIDS-related discrimination, 50 percent of the women but only 8 percent of the men were widowed (Paxton et al., 2005).

No interventions to promote women's leadership rose to the level of evidence of "what works."

Discussion and Recommendations

This paper has reviewed the evidence behind interventions to strengthen the enabling environment. The evidence shows that each of the seven components included in this paper, namely, transforming gender norms, ensuring women's legal rights, enhancing employment opportunities, providing access to education, reducing violence against women, reducing stigma and discrimination, and strengthening women's leadership, are important factors in helping reduce the risk of acquiring HIV and in coping with living with HIV and AIDS. Clearly, educating girls, and providing them with employment or income generating opportunities, in an environment with equitable gender norms, respect for legal rights, non-acceptance of violence, and freedom from stigma and discrimination, will have a positive impact on HIV and AIDS outcomes.

Approaches to Enhance the Enabling Environment

Successful interventions to enhance the components of the enabling environment use a number of approaches, including: training for individuals, communities and providers; community-based participatory learning and education for males and females; peer support; mass media campaigns; microfinance programs linked with training on gender, HIV and violence reduction; law enforcement; and promoting school attendance by girls, including by abolishing school fees. These approaches have led to increasing HIV protective behaviors, creating more gender-equitable relationships and decreasing violence, improving services for women, increasing widows' ability to cope with HIV, reducing behavior that increases HIV risk, particularly among young people, enabling girls to attend (or stay in) school, and reducing HIV stigma and discrimination.

The strength of evidence to measure interventions to enhance the enabling environment tends to rely on Gray III studies, many of which are cross sectional without control groups. While this may be considered a lower level of evidence, in fact, it would not be possible to conduct a study using randomized control trial methodology to study many aspects of the enabling environment. Therefore, the level of evidence, as measured by the Gray Scale, is likely the strongest available. Do we know enough to promote strengthening of the enabling environment as an integral part of the response to HIV and AIDS? The answer is clearly and absolutely, yes.

Additional Evidence for Successful Approaches is Needed

For each of the seven components of the enabling environment included in this paper, many gaps in programming and research remain (Gay et al., 2010). While strong evidence exists for some components, such as girls' education, there is still a dearth of evidence related to some components of the enabling environment, including promoting women's leadership, legal reform and enhancing employment and incoming generating opportunities. Given that the AIDS epidemic is approaching 30 years, it is surprising that the enabling environment has been given relatively little attention in the AIDS response and that the evidence base is not deeper. For example, the importance of transforming gender norms is clear, although there is not a substantial amount of evidence on how to change norms on a national scale. One promising finding from Zimbabwe is that normative change related to reducing concurrent partnerships is possible. Between 1992 and 2007 social norms changed to reduce acceptability of casual sex and payment for sex. In focus group discussions about the change, men noted that they could no longer afford multiple partners and participants mentioned messages concerning fidelity and increased availability of condoms (Muchini et al., 2008). Additional evidence in these areas is greatly needed.

Scaling Up of Effective Interventions for Women and Girls Is Needed

Just as it is important to focus on interventions that have shown success in achieving desired outcomes related to HIV and AIDS, it is also important to scale up the interventions to reach a broad range of women and girls. The interventions highlighted in this paper result from a comprehensive review of the evidence and are recommended as effective, evidence-based strategies; though replication of these strategies should be carried out with adaptations to local contexts and needs. These interventions have been, for the most part, implemented on a small scale and little information has been published on the costs of the interventions, which is critically important to assess the feasibility of scaling up.

Preventing HIV in Women and Girls Depends on Strengthening the Enabling Environment

The environment in which women live can either enable or inhibit their ability to protect themselves from acquiring HIV. This paper has shown that the interventions and approaches listed above provide the most effective known means to create a more enabling environment for women and girls to protect their health. Ultimately, halting and reversing the HIV/AIDS epidemic, particularly among women and girls, will not be possible without addressing—on a large scale—these underlying factors that put women and girls at greater risk. Restrictive gender norms, violence, legal inequalities, stigma and discrimination, unequal access to employment opportunities and education, and limited leadership roles lie at the heart of women's greater HIV risk. Prevention of HIV in women and girls depends on strengthening the enabling environment so that all women, and men, can live healthy and productive lives.

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