

## POSITIVE PREVENTION: HIV TRANSMISSION RISK REDUCTION INTERVENTIONS FOR PEOPLE LIVING WITH HIV/AIDS

Seth C Kalichman, PhD  
University of Connecticut, Storrs, CT, USA

HIV prevention programmes require scaling up in southern Africa, and interventions that target people living with HIV/AIDS (positive prevention) should be included in all comprehensive HIV prevention plans. Positive prevention interventions have been tested in the USA and have been demonstrated effective in reducing HIV transmission risks. Lessons learned from US trials can be used in selecting and adapting positive prevention interventions for use in southern Africa. Efforts to implement positive prevention will be enhanced by reducing institutionalised AIDS stigmas and culturally held AIDS denialism and by increasing access to HIV/AIDS care services including antiretroviral therapies and sexually transmitted infection detection and treatment. Positive prevention should not replace, but rather should augment, generalised HIV prevention interventions targeting high-risk populations.

The history of HIV prevention has followed similar trajectories across cultures. Soon after HIV is identified as a viable threat to a population there are efforts to disseminate educational and motivational messages to the masses. When clearly stated, behaviourally targeted and personally relevant generalised prevention messages do raise awareness and undoubtedly reduce high-risk behaviours in at least some population segments. However, many individuals at risk, perhaps those at greatest risk, are not reached by mass education efforts and remain unaffected by generalised prevention messages. A second phase of HIV prevention is then implemented that focuses on further enhancing motivation and developing risk reduction behavioural skills. Interventions such as community-based voluntary counselling and testing (VCT), risk reduction counselling and targeted community programming are examples of second-generation HIV prevention interventions, several of which have been demonstrated effective in southern Africa.<sup>1-3</sup> These intervention approaches are important because they engage people at high risk for HIV infection, including people who are HIV infected but have not yet tested HIV positive.

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In what is now a third phase of HIV prevention programming, there is a growing movement to implement HIV transmission risk reduction interventions for people who have tested HIV positive, referred to as positive prevention. The US Centers for Disease Control and Prevention (CDC) has declared positive prevention the focal point of US national AIDS prevention policy.<sup>4</sup> There are also calls for the immediate adaptation and implementation of positive prevention for use in southern Africa.<sup>5</sup> In addition, the South African National Strategic Plan for HIV prevention has included positive prevention as one of its central recommendations.<sup>6</sup>

In this article, I review the research basis for positive prevention and discuss its potential utility in southern Africa. I will focus on one intervention in particular that has been widely disseminated in the USA and is currently being adapted for use in Africa. I conclude with recommendations for moving forward with positive prevention initiatives in southern Africa.

### POSITIVE PREVENTION INTERVENTIONS TESTED IN RESEARCH

The first positive prevention interventions were tested in rigorous randomised clinical trials conducted in the USA. Positive prevention has used several intervention delivery formats, including individual counselling, brief medical care provider messages, and small support-group style workshops. The interventions have also been designed for delivery in clinical and community settings and have been aimed to reduce risk in men and women with diverse HIV risk histories. Table I summarises the interventions that have been shown

TABLE I. SUMMARY OF POSITIVE PREVENTION INTERVENTION CONTENT IN FIVE OF THE MOST PROMISING APPROACHES

Study	Target population	Intervention content	Intervention format
Kalichman <i>et al.</i> <sup>7</sup>	Men and women of diverse risk histories at a community-based AIDS service organisation, Atlanta, GA	Healthy Relationships, designed to reduce sexual HIV transmission risk behaviours in relation to disclosure of HIV status to sex partners. Grounded in social cognitive theory, uses coping effectiveness skills training focused on HIV-related stressors and sexual risk-producing situations; skills for self-disclosure decisions; development and maintenance of safer sex practices; and role-playing scenarios presented in popular films.	Five 2-hour small support group style workshops with 6 - 10 participants and community-based group facilitators
Margolin <i>et al.</i> <sup>8</sup>	Substance use treatment patients all on AARV therapy and receiving methadone maintenance in a substance abuse treatment programme, New Haven, CT	Harm Reduction, weekly individual substance abuse counselling, case management and methadone coupled with motivational interviewing; videos for modelling and practice of needle cleaning and correct condom use; harm reduction negotiation role plays; and sharing information with peers. These standard intervention elements were integrated with additional group therapy that addressed medical, emotional and spiritual needs as well as harm-reduction skills to avoid substance use relapse and improve ARV adherence.	Individual substance abuse counselling, daily methadone, case management, and 48 1-hour sessions of harm reduction delivered over 24 weeks
Richardson <i>et al.</i> <sup>9</sup>	Infectious disease clinic patients, southern California	Partners in Prevention, brief messages grounded on social psychological theory of message framing, messages emphasised importance of patient-provider teamwork; loss-framed prevention messages were most effective and were delivered along with brochures and posters.	Ongoing intervention with messages delivered at each clinic visit; each patient received a minimum of 1 session; 3 - 5 min each, over 10 - 11 months
Wingood <i>et al.</i> <sup>10</sup>	Women attending health care clinics in Alabama and Georgia	Willow, based on social cognitive theory and theory of gender and power, the intervention discussed gender pride, personal achievements, managing abusive partners, identifying socially supportive people, transmission risk-behaviour education, debunking myths, safer sex communication and negotiation skills, condom use skills, distinguishing healthy from unhealthy relationships.	Four 4-hour small support group style workshops with 6 - 10 women participants and community-based peer educators
Rotheram-Borus <i>et al.</i> <sup>11,12</sup>	Adolescents and young adults with substance abuse histories in New York, San Francisco, Los Angeles	CLEAR, social action theory based: Module 1, Stay Healthy (coping with HIV; implementing new daily routines to stay healthy; issues of disclosure; participating in health-care decisions); Module 2, Act Safe (reduce substance use and unprotected sex; identify risk behaviour triggers; modify patterns of substance use; increase self-efficacy for condom use and negotiation skills); and Module 3, Being Together (identify values that define personal identity as a person living with HIV; reduce negative emotional reactions to HIV; increase perception of personal self-control; reduce self-destructive motivations).	One-on-one counselling intervention delivered in 3 different modules, each module being 6 1.3-hour sessions. Also tested in a telephone-delivered format

most effective in reducing HIV transmission risk behaviours among people living with HIV/AIDS as tested in randomised controlled trials.

Two meta-analyses of the positive prevention intervention literature concluded that the interventions described in Table I demonstrate significant short-term and long-term reductions in unprotected intercourse, especially with uninfected sex partners and those whose HIV status is unknown.<sup>13-14</sup> It should be noted that these effective interventions share several common features. All the effective interventions were based on sound theories of behavioural change, typically social cognitive theory that emphasises building behavioural skills. The interventions were also intensive, highly interactive, and aimed toward sustained behaviour change. Although the approaches varied, their goals were clearly directed to reduce HIV transmission risks. The interventions did vary considerably in terms of their formats. Some interventions were delivered in multiple small-group sessions, whereas others were delivered by care providers in routine clinical services. The two meta-analyses did examine several other interventions that reported risk behaviour outcomes, but they were not well focused on risk reduction and did not demonstrate substantial preventive outcomes.

## POSITIVE PREVENTION IN SOUTHERN AFRICA

Research is now demonstrating the need for and promise of positive prevention delivered in southern Africa. Studies conducted in Uganda, Botswana, South Africa, and other countries in sub-Saharan Africa are showing that men and women who have tested HIV positive experience difficulty consistently practising safer sex. For example, Bunnell *et al.*<sup>15</sup> found that 47% of HIV-positive men and 21% of HIV-positive women were sexually active prior to initiating ARVs, with 45% of these persons reporting unprotected intercourse in a 3-month period. Simbayi *et al.*<sup>16</sup> found that 7% of HIV-positive men and women in Cape Town reported having recently engaged in unprotected intercourse with a partner who was not known to be HIV infected. Importantly, it was more common for people to report unprotected sex with an uninfected partner to whom they had not disclosed their HIV status than with a partner who they had told. This finding was extended in a subsequent study that showed that the best predictor of failing to disclose HIV status to sex partners was experiencing AIDS-related stigma and discrimination.

Another critical factor in the continued practice of HIV transmission risk behaviours among people living with HIV/AIDS is their access to antiretrovirals (ARVs). Optimally, antiretroviral therapy (ART) reduces HIV concentrations (viral load) in the genital tract that parallel reductions in the blood, potentially lowering HIV infectiousness. Adherence to virus-suppressing ARV regimens can therefore play an important role in HIV prevention, especially in patients who do not have co-occurring sexually transmitted infections.<sup>17</sup>

In contrast to research conducted in Europe and the USA, it appears that receiving ARVs in southern Africa is associated with lower rather than higher levels of HIV transmission risk behaviours. For example, a study conducted in Cote d'Ivoire<sup>18</sup> compared HIV-related sexual risk behaviour among sexually active people being treated with ARVs with that in people not being treated and found that fewer ARV-treated sexually active patients had unprotected sexual intercourse during the previous 6 months. Furthermore, more sexually active males and females who were on ART than their counterparts who were not reported that they had used condoms during the last sexual intercourse. In a prospective analysis, Bunnell *et al.*<sup>15</sup> observed reductions in HIV transmission risk behaviours following the start of ARVs. Also Simbayi *et al.*<sup>19</sup> reported that nearly half of people with HIV in Cape Town who were not taking ARVs engaged in unprotected sex with uninfected partners and failed to disclose their HIV status to their partners. Fig. 1 shows a conceptual framework for linking institutional AIDS stigma and AIDS denialism to HIV/AIDS discrimination, barriers to disclosure, and failure to engage HIV treatment and care services, which in turn can foster continued HIV transmission risk behaviours.

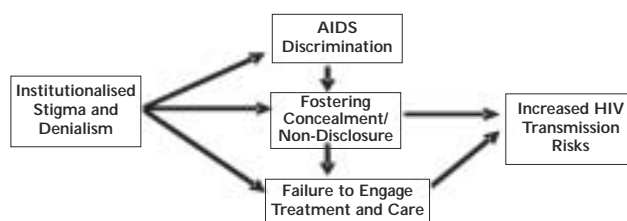


Fig. 1. Association of institutionalised AIDS stigma and denialism with AIDS discrimination, disclosure, and engaging clinical services in relation to HIV transmission risk behaviours.

## ADAPTING POSITIVE PREVENTION FOR USE IN SOUTH AFRICA: HEALTHY RELATIONSHIPS

Effectively implementing positive prevention in southern Africa will require multiple approaches delivered at individual and structural levels in clinical and community settings. One positive prevention intervention approach that is currently being adapted and tested in South Africa and Botswana is Healthy Relationships.<sup>7</sup> The Healthy Relationships intervention has been widely distributed throughout the USA as a part of the CDC's Dissemination of Effective Behavioural Interventions programme. Research being conducted by the Human Sciences Research Council in Cape Town systematically adapted the intervention activities and video material for use in indigenous African communities. Healthy Relationship therefore represents one intervention in the US standard of care for positive prevention.

Using concepts derived from previous mental health and public health interventions for populations affected by AIDS, Healthy Relationships was designed to reduce HIV transmission risks in people living with HIV/AIDS. The intervention uses a highly interactive approach that includes

educational, motivational and behavioural skills building components. In addition, like all effective behavioural interventions the content is tailored for gender and risk behaviour history. The intervention content is also made personally relevant to people living with HIV/AIDS. For example, the intervention is framed around the challenges of establishing and maintaining healthy and satisfying relationships in the face of living with HIV/AIDS. Table II summarises the Healthy Relationships intervention content within the five group sessions.

As suggested by a panel of community advisors, Healthy Relationships encapsulates HIV transmission risk reduction within the context of managing HIV disclosure decisions. Initial skills for making effective HIV disclosure decisions are built in reference to disclosing HIV status to non-sex partners, particularly family members, friends and employers. The intervention content transitions to address issues of HIV disclosure to sex partners using the same principles and intervention techniques that were introduced in the initial disclosure skills-building activities, contextualised and reframed for disclosure to sex partners. Healthy Relationships does not promote or even encourage HIV status disclosure. Rather the intervention explicitly targets reductions in transmission risk behaviours regardless of whether or not disclosure occurs.

The final segment of the intervention addresses building skills for reducing HIV transmission risk behaviours. Risk reduction strategies arise naturally in the context of disclosing HIV status, with different implications for practising protected and unprotected sex with HIV-positive partners, HIV-negative partners, and sex partners of unknown HIV status. Skills building activities established in the two disclosure segments to specifically build skills for reducing HIV transmission risk behaviours are generalised for safer sex skills. The Healthy Relationships model attempts to build behavioural skills

within an initial behavioural domain and then carries the skills forward to related behaviours ultimately addressing risk reduction strategies with partners of varying HIV statuses.

The three behavioural domains of the intervention components (i.e. disclosure to non-partners, disclosure to partners, and safer sex) were conceptualised as potentially stress-producing situations for people living with HIV/AIDS and therefore framed the intervention activities accordingly as stress reduction skills and strategies. Making effective decisions as to whether to disclose HIV status to family, friends, employers, or sex partners and reducing HIV transmission risk behaviours were therefore viewed as coping responses (Fig. 2). Healthy Relationships therefore integrates a mental health conceptualisation to achieve behaviour changes that have public health implications. Each of the intervention components was geared to build self-efficacy for either making effective HIV status disclosure decisions or reducing HIV transmission risks.

The original randomised trial that tested Healthy Relationships demonstrated promising behavioural outcomes over a 6-month follow-up period. Results of the randomised trial showed that Healthy Relationships resulted in significantly less unprotected intercourse and greater condom use at the follow-up assessments. Specifically, 34% of the Healthy Relationships group members reported non-HIV-positive sex

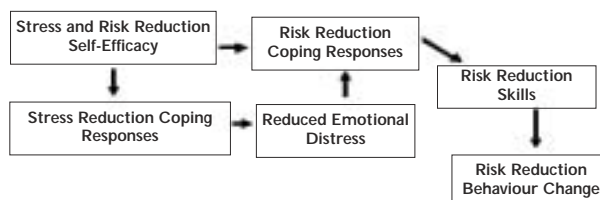


Fig. 2. Social cognitive theory-based coping efficacy model for HIV risk behaviour change in the Healthy Relationships intervention.

TABLE II. SESSION CONTENT FOR THE SOCIAL COGNITIVE HIV RISK REDUCTION INTERVENTION HEALTHY RELATIONSHIPS

Session 1	Welcome group members, state the goals of the group and agree on group rules; ice-breaker activity to establish group cohesion; initial discussion of stress and HIV status disclosure; provide PRF for personal stress levels and disclosure experiences; group process of PRF; view movie scenes for disclosure decision role play; continuum of risks for disclosure activity; light-comedy videotape to end group on upbeat note
Session 2	Communication skills applied to disclosing HIV status to family and friends and other persons who are not sex partners: active listening and assertiveness; identifying and managing triggers and barriers for HIV status disclosure, establishing problem solving skills and decision making skills for HIV disclosure; integrating skills into action; skills practice in role plays setup within movie scenes
Session 3	Review of HIV disclosure skills; applying disclosure decision skills to relationships with sex partners; risks of disclosing and not disclosing HIV status to sex partners; personalised feedback report for disclosure experiences; group discussion of issues of disclosing HIV to sex partners; applying listening skills, assertiveness, problem solving and decision; skills to disclosure situations for sex partners; role playing decisions to disclose to sex partners using movie scenes specified to gender and sexual orientation
Session 4	Implications of decisions to disclose and to not disclose HIV status to sex partners; potential adverse reactions and problem solving; group discussion of safer sex in HIV-concordant and HIV-discordant relationships; PFR for sexual risk behaviours; sexual risk behaviour continuum activity; review of active listening skills, trigger identification and management, problem solving and decision making skills adapted to sex and safer sex behaviours
Session 5	Continuum of safer sex decisions; condom use and the pros and cons of condoms; managing condom aversions and condom use anxiety – condom use desensitisation exercises; condom skills proficiency training; initiation, negotiation, and communication skills for safer sex; role plays within movie scenes to integrate disclosure decisions and safer sex skills

partners at the 6-month follow-up relative to 42% of the control intervention, a significant difference. In addition, rates of unprotected vaginal and anal intercourse with non-HIV-positive partners were significantly lower among the Healthy Relationships groups than the comparison intervention at the 3-month and 6-month follow-ups. Mathematical modelling showed that HIV transmission risk behaviours with non-HIV-positive sex partners would result in significantly fewer new HIV infections from the Healthy Relationships intervention relative to the time-matched control condition. Reductions in potential new HIV infections were greater for HIV-positive men with male sex partners as well as for HIV-positive men with female sex partners.

Subsequent secondary analyses of the Healthy Relationships outcomes demonstrated that the intervention effects were at least partially accounted for by improvements in mental health and coping with emotional stress of living with HIV/AIDS. This finding supports the original model of Healthy Relationships, which specifies that risk reduction will be enhanced by increased stress management (Fig. 2). The potential for Healthy Relationships to address mental health and coping in relation to transmission risk behaviours may be particularly well suited to South Africa, where depression and other mental health challenges are observed in people living with HIV/AIDS.

Although previous research has shown a strong association between HIV/AIDS and depression in Africa, much of this research predated the availability of ART. However, it appears that depression is persistent among people with HIV/AIDS even in the ARV era.<sup>20-21</sup> The considerable amount of psychological distress reported by people infected with HIV is at least in part accounted for by internalised AIDS stigmas. Depression is also part of the expected emotional reaction to learning one is infected with HIV. Of course, depression is widely considered a predisposing risk factor for HIV infection among at-risk populations. A unique feature of the Healthy Relationships intervention is its explicit aim to reduce HIV transmission risk behaviours by addressing stigma experiences, disclosure, social support and other mental health issues.

## CONCLUSIONS

Effectively implementing positive prevention in southern Africa will require reductions in AIDS-related stigmas and denialism to allow people at risk to get tested and engage people with HIV/AIDS into care services. Scaling up access to ARVs can help to further reduce AIDS stigmas and normalise HIV infection as a chronic health condition. Increasing ARV uptake can have the added benefit of reducing HIV infectiousness when HIV-suppressive regimens are adhered to and patients receive aggressive STI detection and treatment services.

Positive prevention holds great promise to fill an important gap in HIV prevention programming. However, we must never

delude ourselves by placing all of our prevention resources in just one strategy, especially not positive prevention. Generalised epidemics demand interventions that will capture individuals who are HIV infected but have not yet been tested positive. Positive prevention will only be effective when delivered side by side with effective primary prevention interventions that target high-risk populations, within which many people are untested HIV positive. HIV prevention programming must remain comprehensive and positive prevention should be considered an integral part of any comprehensive HIV prevention plan.

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