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HIV Prevention Knowledge Base: Emerging Areas

HIV Prevention for Serodiscordant Couples

AIDSTAR-One's HIV Prevention Knowledge Base series provides policy makers, researchers, program planners, and managers with the latest information related to HIV prevention. It includes current syntheses on research findings and successful practices as well as useful tools for program implementation. Topics focus on emerging areas, and behavioral, biomedical, and structural interventions, as well as combination approaches.

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HIV serodiscordant couples, in which one partner is HIV-positive and the other is HIV-negative, are a priority for HIV prevention interventions in developing countries. Although there is considerable variation across countries, recent studies in a few sub-Saharan countries with mature epidemics suggest that up to two-thirds of infected couples are discordant. Effective HIV prevention interventions targeting serodiscordant sex partners and cohabitating or married couples could potentially reduce new HIV infections to HIV-negative sex partner(s). Yet, program experience in this area is recent in developing countries.

A small number of interventions are aimed at preventing HIV transmission between partners in discordant couples. The three following types of interventions have emerged in the literature:

1. Couple HIV Voluntary Counseling and Testing (CVCT)—both via community-based outreach and in antenatal clinics
2. Group-based workshops with serodiscordant couples
3. Integrated antiretroviral therapy (ART) and HIV prevention programs.

Couple HIV counseling and testing is the cornerstone of many discordant couple interventions—it remains the only way to identify couples where one partner is HIV-positive and where one is HIV-negative. For effective prevention programming, couple testing programs will likely require integration with broader HIV programs, including linkages to care, treatment, and support services; mother-to-child transmission (MCTC) programs; condom promotion; and other behavior change communication activities.

What We Know: Summaries of Select Background Research

The following select articles highlight research findings on serodiscordant partnerships. Brief summaries of the articles are directly taken or summarized from the article abstracts (complete abstracts can be found on PubMed or Medline).

HIV Transmission Risk Behavior among HIV-Infected Adults in Uganda: Results of a Nationally Representative Survey.

AIDS (2008). Vol. 22 No. 5, pp. 617-24
Bunnell, R., Opio, A., Musinguzi, J., et al.

This national cross-sectional study examined factors associated with HIV transmission risk among HIV-infected Ugandan adults. The majority of persons were not aware of their HIV status (79 percent), and few reported condom use at last sex encounter. Yet nearly half (40 percent) of the cohabiting persons had an HIV-negative spouse. Individuals who knew their HIV status (21 percent) were three times more likely to use a condom at last sex act compared to those who were not tested for HIV. Those who knew their partners' HIV status (9 percent) were 2.3 times more likely to use condoms at last sex act than those who did not know their partner's HIV status. Despite this finding, among this national sample of HIV-infected Ugandan adults, 91 percent did not know their partner's status. Findings highlight the need for interventions to support HIV testing among partners.

Living with Discordance: Knowledge, Challenges, and Prevention Strategies of HIV-Discordant Couples in Uganda.

AIDS Care (2005). Vol. 17 No. 8, pp. 999-1012
Bunnell, R., Nassozi, J., Marum, E., et al.

This qualitative study explored understanding of discordance among HIV discordant couples who sought voluntary counseling and testing in Uganda. The study found that misconceptions about discordance were widespread. Common explanations included: the concept of a hidden infection not detectable by HIV tests (i.e., that the HIV negative partner is actually infected), belief in immunity, the thought that gentle sex protected HIV negative partners, and belief in protection by God. The study also found that the majority of counselors lacked clear explanations for HIV discordance.

New Heterosexually Transmitted HIV Infections in Married or Cohabiting Couples in Urban Zambia and Rwanda: An Analysis of Survey and Clinical Data

The Lancet (2008). Vol. 371, pp. 2183-91
Dunkle, K., Stephenson, R., Karita, E., et al.

Most HIV transmission in sub-Saharan Africa is due to heterosexual transmission. The degree to which HIV transmission occurs within relationships is a critical question. Using data from Demographic and Health Surveys (DHS) in Zambia and Rwanda, and data from couples (married, cohabiting, and non-cohabiting) from a voluntary counseling and testing service, the study estimates that 55.1 percent to 92.7 percent of new heterosexually acquired HIV infections among adults occurred within serodiscordant marital or cohabiting relationships. Applying a statistical model that took into account the higher rates of reported

condom use in non-cohabiting partners, researchers estimated that from 60.3 percent to 94.2 percent of new heterosexually acquired infections occurred within marriage or cohabitation.

HIV-1-Discordant Couples in Sub-Saharan Africa: Explanations and Implications for High Rates of Discordancy

Current HIV Research (2007). Vol. 5, pp. 414-29
Guthrie, B., de Bruyn, G., & Farquhar, C.

A review of published studies on discordant couples was undertaken to ascertain factors that may explain high rates of HIV discordance and why some individuals remain uninfected despite repeated exposure to HIV. The review identified a number of correlates of transmission, including: sexually transmitted infections (STIs), particularly genital ulcerative diseases; HIV viral load; condom use; and specific sexual practices, particularly high number of sexual partners and higher frequency of sexual contact. The authors highlight the importance of timing of HIV infection relative to relationship formation when examining the progression of the epidemic at the population level. One hypothesis they put forward is that in early epidemics, most discordant couples arise when HIV is introduced into a preexisting relationship; in more mature epidemics, where there are many more people who have been infected with HIV, a greater proportion of discordant couples initiate relationships with a partner already infected. The authors recommend targeted interventions to identify acute infections, diagnose and treat STIs, and promote condom use in non-monogamous couples.

Sero-Discordant Couples in Five African Countries: Implications for Prevention Strategies

Population and Development Review (2007). Vol. 33 No.3, pp. 501-23
de Walque, D.

This paper examines nationally representative samples, which include the results of HIV tests, to identify two surprising findings in relation to serodiscordant couples. First, at least two-thirds of infected couples were discordant couples. This finding highlights the importance of directing prevention efforts toward serodiscordant couples. Second, in 30 percent to 40 percent of infected couples, only the female partner is infected. The latter finding highlights the need to target prevention efforts toward both women and men engaging in sexual activity outside of a primary relationship.

Putting it into Practice: Summaries of Key Interventions on HIV Serodiscordant Couples

Identification and review of relevant interventions is currently in process. The section below highlights some key interventions by type. Note that this is not an exhaustive list, and in particular, does not necessarily capture all of the discordant programs being implemented at the field level. These will be updated as information becomes available.

Couple HIV Voluntary Counseling and Testing (CVCT) and Relationship-Based Couple Counseling

Couple-Centered Testing and Counseling for HIV Serodiscordant Heterosexual Couples in Sub-Saharan Africa

Reproductive Health Matters (2008). Vol. 16 No. 32, pp. 151-61
Desgrees-du-Lou, A., & Gliemann, J.

Seizing the opportunity for HIV prevention within the context of serodiscordant, stable relationships, couple-centered HIV voluntary counseling and testing (VCT) can facilitate HIV status disclosure, communication, and ongoing HIV prevention behavior. Couple-centered approaches have not been widely implemented, however; most counseling interventions for discordant couples occur at the individual level (e.g., within antenatal programs, STI care). This paper reviews published research on couple-centered VCT programs among serodiscordant, heterosexual couples in sub-Saharan Africa. All published couple-centered counseling interventions have demonstrated the following: increased disclosure of HIV status to one's partner; decreased partner violence among women who disclosed their HIV status to their male partners; and increased condom use. Gender issues were also raised: in one multi-site study, serodiscordant couples in which the woman was HIV-positive were more likely to report an end to the marriage (though this trend was found in settings both with and without couple-based VCT). An ongoing challenge to couple-centered VCT is a lack of participation due to low acceptability of the program among potential clients, but promotion of couple-oriented services with media and home-based visits by trained community health workers seemed to be effective. The authors highlight the need for more programs and research with couple-centered HIV counseling programs in order to enhance HIV prevention outcomes.

Sexual Behaviour of HIV Discordant Couples after HIV Counseling and Testing

AIDS (2003). Vol. 17 No. 5, pp. 733-40
Allen, S., Meinzen-Derr, J., Kautzman, M., et al.

The impact of joint voluntary counseling and testing (VCT) was assessed with 963 cohabiting heterosexual HIV discordant couples. HIV discordant couples reported a marked increase in condom use after joint VCT, and maintained this reduction for at least a year. Almost one-quarter of discordant couples reported perfect condom use. Most couples reported occasional lapses, but only 10 percent reported unprotected sex at each follow-up visit.

Promotion of Couples' Voluntary Counseling and Testing for HIV through Influential Networks in Two African Capital Cities

BMC Public Health (2007). Vol. No. 349

Allen, S., Karita, E., Chomba, E., et al.

While couples voluntary counseling and testing (CVCT) is an effective strategy to prevent new HIV infections in cohabiting heterosexual couples, implementing sustainable strategies to encourage couples testing remains challenging. A promising approach utilizes Influence Network Agents (INAs) from health, religious, non-governmental, and private sectors to invite couples for CVCT. In four months, 61 INAs distributed 9,900 invitations which resulted in 1,411 (14.3 percent) couples requesting CVCT. Invitations were most likely to be successful when delivered in an INA's home, to both partners, or to someone known to the INA. Obstacles of limited time and money for transportation must be addressed in order to increase CVCT uptake. Uptake of invitations might also increase if INAs could provide home-based testing or be accompanied by someone trained to do so.

Evolution of Couples' Voluntary Counseling and Testing for HIV in Lusaka, Zambia

JAIDS (2008). Vol. 47 No. 1, pp. 108-15

Chomba, E., Allen, S., Kanweka, W., et al.

Couples' voluntary counseling and testing (CVCT) can be an effective strategy for reducing risk of HIV transmission in cohabiting couples. Developing promotional strategies to reach couples and encourage them to test together remains challenging. In order to facilitate access to CVCT services, community workers are recruited from among previously tested couples to perform outreach. After training, community workers conduct promotional activities door-to-door near the clinic. The program provides transport, childcare, and lunch, addressing common access barriers. Door-to-door efforts by community workers resulted in substantial increases in CVCT attendance. Attendance dropped once community outreach ended, despite continued mass media advertisements. While effective, the peer model was labor and cost intensive. The study demonstrated that couples will access joint VCT if financial and logistical obstacles are overcome.

Sexual Practices of HIV Discordant and Concordant Couples in Rwanda: Effects of a Testing and Counselling Programme for Men

International Journal of STD & AIDS (2001). Vol. 12, pp. 181-88

Roth, D., Stewart, K., Clay, O., et al.

The husbands and male cohabiting partners of 684 Rwandan women were recruited to participate in an HIV testing and male-focused counseling program. All of the women and 256 of the men (37 percent) had previously received standard HIV testing and basic counseling services, while 428 men were receiving testing and counseling for the first time. The rate of condom use increased dramatically for serodiscordant couples participating in the program after 12 months. The effect was especially strong for couples in which the male partner received HIV testing and counseling for the first time. Increase in condom use was also observed in couples where both partners had been tested and counseled previously. These findings suggest that male- and couple-focused HIV counseling and testing programs may provide an additional impetus for HIV prevention behavior change among heterosexual couples.

Efficacy of Voluntary HIV-1 Counselling and Testing in Individuals and Couples in Kenya, Tanzania, and Trinidad: A Randomised Trial

The Lancet (2000). Vol. 356, pp. 103-12

Coates, T. J., and The Voluntary HIV-1 Counseling and Testing Efficacy Study Group

Voluntary counseling and testing (VCT) in developing countries has been advocated as an important prevention strategy, and there is an increasing emphasis on couples' VCT (CVCT). This study examined the impact of VCT on individuals and couples in Kenya, Tanzania, and Trinidad. Couples receiving VCT reduced unprotected intercourse with their sex partners enrolled in the study significantly more than couples receiving only health information. However, no differences were found in unprotected intercourse with sex partners not enrolled in the study. Couples in which one or both partners were diagnosed with HIV were more likely to reduce unprotected intercourse than couples in which both partners were uninfected. The study shows CVCT can promote behavior change among couples.

Antenatal Couple Counseling Increases Uptake of Interventions to Prevent HIV-1 Transmission

JAIDS (2004). Vol. 37 No. 5, pp. 1620-26

Farquhar, C., Kiarie, J., & Richardson, B.

This study highlighted the benefits of antenatal couple counseling and voluntary testing and counseling (VCT) to prevent HIV infections. Women attending an antenatal clinic in Nairobi were encouraged to invite their partners to the clinic for VCT and were offered individual or couple post-test counseling. Among 2,104 women accepting testing, 308 (15 percent) had partners participate in VCT, of whom 116 (38 percent) were couple counseled. Partner participation in VCT was associated with increased uptake of interventions to prevent sexual and mother-to-child HIV transmission. The HIV-positive women (10 percent of 314 HIV-positive women) who came with their partners for VCT were three times more likely to return for Nevirapine and to report administering the drug to their infants at delivery. HIV-positive women receiving couple counseling were five times more likely to avoid breast feeding compared with those who were counseled individually. Couples who received partner notification of HIV-positive test results were more likely to use condoms. The association between partner participation and uptake of these interventions was strongest when partners agreed to be counseled as a couple. One of the challenges emerging from the study is identifying strategies to increase partner participation.

The Efficacy of a Relationship-Based HIV/STD Prevention Program for Heterosexual Couples

AJPH (2003). Vol. 93 No. 6, pp. 963-69

El Bassel, N., Witte, S., et al.

This study of 217 heterosexual couples in the United States demonstrated the efficacy of a relationship-based HIV/sexually transmitted infection prevention program for couples at risk for infection. The six-session intervention was based on the AIDS Risk Reduction Model and emphasized relationship dynamics. Couples were randomly assigned to one of three groups: 1) six-session intervention delivered to couples together; 2) six-session intervention delivered to the women alone; and 3) a control group in which a one-session intervention was delivered to the women alone. The study found the couple and individual women's interventions were equally effective in reducing the proportion of unprotected sexual acts and increasing the proportion of protected sexual acts.

Group-Based Workshops with Serodiscordant Couples

Influence of Partner Participation on Sexual Risk Behavior Reduction among HIV-Positive Zambian Women

Journal of Urban Health (2005). Vol. 82 No. 3, pp. iv92-iv100
Jones, D., Ross, D., Weiss, et al.

This study reports on a group-based intervention (adapted from an urban U.S. context) for HIV-positive women and their HIV-negative male partners in Zambia. Females attended four group intervention sessions and received sexual behavior skills training. Their male partners attended either a single session or a four-session gender concordant intervention. Both men and women increased and sustained condom use following the intervention. Women with partners who attended the four-session intervention reported higher rates of condom use, more positive condom attitudes, safe sex intentions, and less alcohol use. The findings highlight the opportunity of interventions to include both partners to influence the sexual dynamics of a relationship.

A Group-Based Intervention to Increase Condom Use among HIV Serodiscordant Couples in India, Thailand, and Uganda

AIDS Care (2007). Vol. 19 No. 3, pp. 418-24
McGrath, J. W., Celentano, D. D., & Chard, S. E.

A group-based intervention with serodiscordant couples was conducted in India, Thailand, and Uganda. The intervention consisted of four sessions: the first two sessions were single sex groups, and the last two sessions included both partners. The intervention focused on communication, problem solving, and negotiation skills. Participants were enthusiastic about the intervention, citing information about HIV serodiscordancy and the opportunity to meet couples 'like us' as important features. At follow-up, 90 percent of participants reported using some of the skills learned. Condom use with sexual contacts reached 100 percent at the first follow-up visit, although the authors noted that social acceptability bias might be a factor in the reported high use of condoms.

Project Eban: A Giant-Step Forward (Editorial)

JAIDS (2008). Vol. 49 No. 1, pp. S1-S2
Williams, D., Allen, S., & Padian, N.

The theory-based Eban Project is an Afrocentric intervention comprising four couple sessions and four group sessions, addressing individual-, interpersonal-, and community-level factors that contribute to HIV/sexually transmitted infection (STI) transmission risk. Study participants were 535 HIV serodiscordant, heterosexual, African American couples. Interesting features of the intervention development highlighted in this editorial may be relevant for other programs that are developing interventions for underserved and stigmatized populations. These include: implementing an intervention with a hard-to-reach and transitory population, often with multiple co-morbidities; integrating African American cultural context into the intervention; and working with couples in a committed partnership of six months or more. The study plans to test the effects of the intervention on STI incidence and condom use (*findings pending*).

Integrated Antiretroviral Therapy and HIV Prevention Programs

Changes in Sexual Behavior and Risk of HIV Transmission after Antiretroviral Therapy and Prevention Interventions in Rural Uganda

AIDS (2006). Vol. 20 No. 1, pp. 85-92

Bunnell, R., Ekwaru, J., Solberg, P., et al.

The Home-Based AIDS Care Project offers home-based antiretroviral therapy care to HIV-positive patients. It offers prevention counseling and home-based voluntary counseling and testing to all household members of positive patients. In individual sessions, participants develop personal sexual behavior plans. Overall there was a 70 percent reduction in risky sex (over 85 percent of risky sexual acts occurred within married couples) and an estimated 98 percent reduction in the number of seroconversions after six months. The study supports arguments for incorporating prevention into antiretroviral programs.

Undiagnosed HIV Infection and Couple HIV Discordance among Household Members of HIV-Infected People Receiving Anti-Retroviral Therapy in Uganda

J. Acquir Immune Defic Syndrome (2006). Vol. 43 No. 1, pp. 91-5

Were, M., Mermin, J., Wamai, N., et al.

The Home-Based AIDS Care Project offers home-based antiretroviral therapy (ART) care to HIV-positive patients. It also offers prevention counseling and home-based VCT to all household members of HIV-positive patients. Couples were encouraged to receive results together, and where HIV discordance was identified, partners were offered enhanced couple counseling that included making personalized couple risk-reduction plans. Of the household members of people taking home-based ART, 99 percent accepted VCT and almost all were tested in their homes. Many persons with HIV believe their partners are already infected and therefore do not avoid high-risk practices; however, the study found that of patients' spouses tested for HIV, 43 percent were HIV-negative. The study demonstrated that delivering VCT to household members of people initiating ART is well accepted by household members and can result in the detection of a large number of previously undiagnosed HIV infections and HIV discordant relationships.

Tools and Curricula

Comprehensive CHCT Training Package

This curriculum was developed in response to increased demand from field partners for interventions and training that would help them address the complex issues related to HIV counseling and testing with couples.

Available at <http://cdc.gov/globalaids/CHCTintervention/>

Intervention Materials from Randomized Trial of Voluntary HIV-1 Counseling and Testing

Materials from this randomized trial in Kenya, Tanzania, and Trinidad (The Voluntary HIV-1 Counselling and Testing Efficacy Study Group, UCSF) include intervention curricula and questionnaires.

Available at <http://www.caps.ucsf.edu/projects/VCT>

Learn More:

Related Prevention Activities

See also: [Interventions involving people living with HIV](#)
[PMTCT](#)
[Antiretroviral treatment as prevention](#)

Other Resources

Background information from UNAIDS on voluntary counseling and testing:

http://data.unaids.org/Publications/IRC-pub01/jc379-vct_en.pdf

Further information on the CVCT studies conducted by the Rwanda-Zambia HIV Research Group:

<http://www.rzhrq.org/>

World Health Organization HIV testing and counseling toolkit:

<http://www.who.int/hiv/topics/vct/toolkit/en/index.html>

World Health Organization guidance on provider-initiated HIV testing and counseling in health facilities:

<http://www.who.int/hiv/pub/vct/pitc2007/en/index.html>

World Bank Policy Research Working Paper (no. 3956) on discordant couples:

<http://econ.worldbank.org>