

REDUCING WOMEN'S RISK OF HETEROSEXUAL TRANSMISSION OF HIV IN THE U.S.

Marcela Raffaelli and Jill R. Brown, University of Nebraska - Lincoln

Assuming no major scientific breakthrough in tools that protect against the sexual transmission of HIV in the near future, to prevent HIV infection among women in the United States, it will be necessary not only to promote changes that support the active role of women in prevention but also to promote change in the attitudes and behaviors of men. (Amaro 1995 445)

Well into the third decade of the AIDS pandemic, it has become clear that stemming heterosexual transmission of HIV, the virus that causes AIDS, will require innovative ways of thinking about the myriad factors that influence sexual behavior. We focus on the growing HIV/AIDS epidemic among heterosexual women in the U.S. Building on prior work in this area, we begin at the point where many considerations of this topic end: the need to shift the focus of prevention efforts from women to their male partners. This shift does not reflect a belief that women are passive participants in sexual encounters, but rather the recognition that many women who become infected with HIV do not engage in any "risk behaviors" other than unprotected sexual intercourse with a primary partner. Thus, interventions must focus not only on women's sexual behavior but also on reducing the male partner's risk of HIV exposure and fostering sexual behavior change at the level of the couple. We consider the implications of moving from prevention strategies that make women the "gate-keepers" of sexual risk reduction efforts to approaches that take into account the gendered and interactive nature of sexuality. We first describe current and future dimensions of the HIV/AIDS epidemic in the U.S. Following this, we review prevention efforts aimed at sexual risk reduction among heterosexual women. We then discuss programs that focus on heterosexual men. Finally, we consider future challenges for the prevention of HIV/AIDS among heterosexual women.¹

PAST, CURRENT, AND FUTURE DIMENSIONS OF THE HIV/AIDS EPIDEMIC IN THE U.S.

The acquired immunodeficiency syndrome (AIDS) is devastating the lives of millions of

women, while many millions more are at risk for infection at this time. Women who engage in heterosexual intercourse are the group most rapidly becoming infected with human immunodeficiency virus (HIV) in the United States. (O'Leary & Jemmott 1995 ix)

Since the beginning of the HIV/AIDS epidemic, there have been 886,575 AIDS diagnoses and half a million deaths due to AIDS in the U.S. (CDC 2002). Despite treatment advances that contribute to increased survival among those infected with HIV and reduce the risk of maternal-child transmission of the virus, HIV/AIDS represents a continued threat to the health of the nation. This is reflected in the fact that in 2001, AIDS was the 6th leading cause of death among both male and female 15-to-44-year-olds in the United States (CDC 2004).

From its initial emergence, AIDS has been unequally distributed among different segments of the U.S. population. According to statistics compiled by the Centers for Disease Control, the majority of the 384,906 people living with AIDS at the end of 2002 were adolescents or adults, with 43 percent of cases occurring in the 35-44 age group and 30 percent in the 45-54 age group (CDC 2002; unless otherwise noted all statistics in this and the next paragraph are from this report). In terms of gender, over three quarters (78.3%) of adolescents and adults living with AIDS are male; 21.7 percent are female. The majority of AIDS cases among men are attributed to male-male sexual contact (58%), injecting drug use (23%), or both (8%); just 10 percent of AIDS cases among men are attributed to heterosexual exposure, and 2 percent to other or unknown risks. Among women, the majority of AIDS cases are attributed to heterosexual exposure (61%); 36 percent are attributed to injecting drug use and 3 percent to other or unknown risks. Members of ethnic minority groups are over-represented in AIDS statistics: in 2002, estimated rates of AIDS were highest among African American men (108.4 per 100,000) and women (48.6), followed by Hispanic men (39.7) and women (11.3), American Indian/Alaska Native men (16.9) and women

(5.8), White men (12.3) and women (2.1) and Asian/Pacific Islander men (8.6) and women (1.5).

Because of the long incubation period, reporting delays, and changes in the case definition for AIDS introduced in 1993, these statistics do not accurately represent the future of the epidemic, particularly as it relates to gender. AIDS diagnoses have increased among women each year between 1998 and 2002, from 23.8 percent to 26 percent of all cases, with a corresponding decrease among men. Foreshadowing the probable future of the epidemic, surveillance of new HIV infections among 13-24 year olds indicates that almost half (47%) are occurring among young women (CDC 2003a). The changing gender dynamics of the HIV/AIDS epidemic are linked to a shift in exposure categories over time. Early on, the epidemic was concentrated among gay and bisexual men and their partners; however, as HIV spread into the general population, this pattern changed. The incidence of exposure through heterosexual contact increased between 1998 and 2002: from 12.3 percent to 15.9 percent of AIDS cases among men and from 61.3 percent to 68.2 percent of AIDS cases among women. Given these trends, the HIV/AIDS epidemic in the U.S. is likely to increasingly resemble the pattern observed in much of the rest of the world, where women account for approximately half of the HIV/AIDS cases and heterosexual contact is the primary mode of transmission. This changing reality will pose a formidable challenge to public health efforts and require that HIV/AIDS prevention efforts be refined and redirected.

PREVENTING HETEROSEXUAL TRANSMISSION OF HIV/AIDS AMONG WOMEN: APPROACHES AND CHALLENGES

Evidence is clear that it is more difficult for women to achieve condom use in an ongoing stable relationship. Unfortunately, many (probably most) women who have become infected globally have been infected by a primary partner. (O'Leary & Wingood 2000 195-196)

Within the last 100 years, medical science has allowed humans to eradicate most infectious diseases that caused the majority of deaths throughout history, either through the development of vaccines or the discovery of effective cures. This has not been the

case for HIV/AIDS. Although highly active anti-retroviral therapy (HAART) represents a significant treatment advance, an effective vaccine against HIV has not yet been developed (UNFPA 2001) and a cure for AIDS remains elusive. As a result, prevention remains the focus of HIV/AIDS intervention efforts (Auerbach & Coates 2000; DiClemente 2000).

Physical barriers remain the primary method for preventing the spread of HIV during heterosexual intercourse. To date, promoting the use of male condoms has been at the core of most HIV prevention efforts (UNAIDS 2001). Because use of the male condom requires the partner's cooperation – which may be difficult to enlist – there is a long-recognized need for female-controlled prevention methods (Gollub 1995; Gupta & Weiss 1995; Stein 1990). The female condom was introduced in the early 1990s and represents an alternative to the male condom. However, although research studies suggest that women are willing to try them (e.g., Hoffman, Exner, Leu, Ehrhardt, & Stein 2003), female condoms are not widely used due in part to their high cost, difficulty of insertion experienced by some women, and visibility to the male partner (Logan, Cole, & Leukefeld 2002; O'Leary & Wingood 2000). Moreover, condom use is not a viable long-term strategy for a woman who wants to become pregnant. Thus, development of an unobtrusive, inexpensive, female-controlled barrier — most likely in the form of a vaginal microbicide that would prevent transmission of HIV while permitting conception to occur — remains a high priority. According to the National Institute of Allergy and Infectious Diseases (2004), several topical microbicides are currently being tested in clinical trials to evaluate acceptability, safety, and effectiveness.

In the absence of new prevention technologies, individuals can reduce their risk of exposure to HIV by engaging in safer sexual practices. Many intervention approaches aimed at changing sexual behavior among different populations have been developed. Interventions draw on a variety of theoretical bases, including individual-level (Fisher & Fisher 2000) and community-level (Rogers 2000) models. Of greatest relevance to this paper, a large number of programs have been implemented with women at risk of heterosexual transmission of HIV (for reviews, see Ickovics & Yoshikawa 1998; Lo-

gan et al 2002; O'Leary & Wingood 2000). Most U.S.-based intervention programs aimed at heterosexual women have focused on individual-level factors and been delivered in small-group settings (Ickovics & Yoshikawa 1998). In their review of HIV/STI interventions for sexually active heterosexual women (excluding commercial sex workers), O'Leary and Wingood (2000) noted that the majority recruited women in urban health-care settings, with a primary focus on the promotion of condom use.

Several recent reviews provide information regarding the success of behavior change interventions for heterosexual women. A meta-analysis of 30 randomized intervention trials implemented with high-risk heterosexual adults (Logan et al 2002) revealed small but significant overall effects, indicating that interventions led to increases in condom use and decreases in the number of sex partners. There were no gender differences in effect sizes for condom use ($r = .059$); the mean weighted effect size for number of partners was significant for women ($r = .073$, $p < .005$) but not men ($r = .002$, ns), suggesting that women were more likely than men to reduce their number of sex partners after participating in interventions. The findings are encouraging, but the authors noted that there was little evidence that initial behavior changes are sustained over time. Moreover, although the small number of studies in each category made drawing firm conclusions impossible, interventions involving women who were most likely to perceive themselves at risk of HIV infection appeared to be most effective: no significant effects for either condom use or number of partners were found for programs whose participants were recruited in primary health care settings as compared to STD clinics, drug treatment facilities, or low-income housing (Logan et al 2002). Reviewing programs for women around the world, Ickovics and Yoshikawa (1998) reported that 32 of 51 interventions led to "slight to moderate" changes in at least one measure of sexual behavior (usually condom use), with the most successful programs targeting commercial sex workers rather than general populations of heterosexual women. Based on their review, O'Leary and Wingood (2000) concluded that interventions tended to be most effective at promoting sexual behavior change among women who were not in long-term relation-

ships.

The accumulated evidence indicates that even the most successful programs are of limited success in promoting sexual behavior changes among general populations of heterosexual women. Ten years ago, Amaro (1995) proposed that one major reason for this lack of success is that programs tend to be based on theoretical models of sexual behavior that are of limited applicability to women because they ignore the fact that sexual behavior takes place within social and cultural contexts; assume that sexual activity is under an individual's control (rather than being the result of impulse or coercion); and ignore the influence of sociocultural factors (e.g., gender roles, values, norms) on sexuality. Reflecting on the modest results of their meta-analysis, Logan and colleagues (2002) echoed these themes, stressing the need for prevention programs that acknowledge the relational context in which sexual activity typically occurs, target men or couples, and take a comprehensive approach to HIV prevention (e.g., combining HIV interventions with substance abuse treatment or primary care). O'Leary and Wingood emphasized the need to

begin to address the economic, cultural, and sociopolitical issues that underlie the difficulty many women face in their efforts to protect themselves, (2000 196)

including power disparities and violence. Feminist scholars (e.g., Gupta 2000; Heise 1995) have pointed out how traditional gender relations place women at a disadvantage in sexual relationships. In response to these concerns, recent interventions have attempted to go beyond the individual level and consider broader influences on sexuality.

Some programs have focused on building social support and community norms that foster women's sexual risk reduction efforts. For example, Sikkema and Kelly (2000) described a multisite community level intervention implemented in 18 low-income housing developments in five U.S. cities. After baseline assessments were completed, housing developments were randomized to one of two conditions. Women living in housing developments assigned to the experimental group ("intervention developments") received a one-year housing community-level intervention that

involved opinion leaders in risk reduction workshops and the formation of Women's Health Councils to undertake prevention outreach activities and organize community-based events. Condoms and AIDS educational materials were made available to all women in the intervention housing developments. Women living in housing developments assigned to the control group ("comparison developments") were mailed a coupon for 10 free condoms and HIV/AIDS brochures. Baseline assessments and 12-month follow-ups conducted with 690 primarily African American women revealed that women in the intervention developments significantly decreased their HIV risk behavior, whereas those in the comparison developments showed little change. For example, the percentage of intercourse acts protected by condoms during the past two months increased from 30 percent at baseline to 47 percent at follow-up among women in the intervention developments; those in comparison developments showed little change (34% to 36%). The effects were magnified among women who had been exposed to more of the intervention activities. Results from this study suggest that community-level interventions can be successful in bringing about sexual behavior change among women.

Responding to the call that interventions target couples rather than individuals, a recent study examined the efficacy of a relationship-based program for heterosexual couples (El-Bassel, Witte, Gilbert, Wu, Chang, Hill, & Steinglass 2003). Women in long-term relationships with partners they knew or suspected engaged in at least one HIV/STI risk behavior (e.g., sex with another partner, injecting drug use) were recruited and asked to recruit their partner into the study. Both partners completed baseline measures and then couples were randomly assigned to one of three study arms: couples condition (six session intervention delivered to the couple); woman-alone condition (the woman attended the six session intervention without her male partner); education control (the woman received a one-session information session). Both partners completed follow-up assessments three months post-intervention. Participants in the couples and woman-alone conditions showed significantly safer sexual behavior than those in the control condition at follow-up; however,

no significant differences were observed between women who received the intervention with their partners and those who received the intervention alone. The authors speculate that this was due to similar intervention content (both the couples and woman-alone conditions focused on relationship issues, and participants completed homework assignments with their partners) and self-selection (only 56% of eligible couples participated, and half of the cases of non-participation were due to male partner refusal, so women with highly resistant or abusive partners were probably under-represented in the study). The study findings are encouraging because they suggest that it is possible to promote condom use among couples in long-term relationships by focusing on how issues of trust and intimacy may act as barriers to HIV/STI protection. At the same time, the challenges of involving couples in HIV/AIDS interventions are apparent.

Other interventions explicitly address gender-related aspects of sexual relationships. One promising model is Connell's (1987) theory of gender and power, which elucidates sexual inequality and gender and power imbalances in relationships between men and women. Connell identified three major social structures that characterize male-female relationships: sexual division of labor, division of power, and the structure of cathexis (i.e., affective aspects of the relationship). Wingood and DiClemente (2000) identified HIV/AIDS interventions for women that reflected components of the theory of gender and power. Although few interventions were explicitly based on the theory of gender and power, there was support for individual components of the model. Recent interventions based on the theory of gender and power have shown success in promoting sexual risk reduction among incarcerated women (St. Lawrence, Eldridge, Shelby, Little, Brasfield, & O'Bannon 1997) and women living with HIV (Wingood, DiClemente, Mikhail, Lang, McCree, Davies, Hardin, Caliendo, Hook, & Vernum 2004), suggesting the potential of this approach for HIV prevention with general populations of women (Harvey 2000).

In recent years, the construct of empowerment has been incorporated into HIV interventions for women. An example is a multi-faceted program for Latina immigrant women in San Francisco named *Mujeres Unidas y*

Activas [active and united women] (MUA) (Gomez, Hernandez, & Faigeles 1999). MUA is an education, organizing and advocacy project aimed at empowering immigrant and refugee Latina women and the broader Latino immigrant community to bring about economic, political and social equality. HIV prevention was not the sole focus of the program, but was integrated into MUA activities, which included group meetings, support sessions, HIV workshops, leadership training, community participation activities, and a volunteer HIV peer educator program. An evaluation of 74 women who participated in baseline, 3-month, and 6-month interviews revealed that consistent condom use was low at baseline (41% of participants had ever used a condom, and 21% used one at last intercourse) and remained low at the 6-month follow-up (48% lifetime, 26% last intercourse). Participants did show significant increases in sexual communication comfort and sexual comfort over time, and decreased endorsement of traditional sexual gender norms. Among women with male partners in the past year, fear of coercion decreased; among those in steady relationships, the male partner's decision-making power was reported to have decreased. The findings indicate that community-initiated programs may be a valuable way of reaching women, but underscore the need for identifying methods of bringing about sexual behavior change within more general programs.

Another participatory approach is action research, which is rare in the U.S. but has been used effectively in other countries. One example is the program developed by the CONNAISSIDA group to address the HIV/AIDS epidemic in Kinshasa, Zaire. Action research "begins with the principle that people already know a great deal about their own situations" (Schoepf 1993 1403) and builds on this knowledge through social interaction to develop a critical consciousness about, in this case, sexual behavior and HIV and its causes. The group created culturally appropriate risk-reduction workshops targeting different groups of women (e.g., sex workers, church group members). Evaluations were conducted with 60 women who participated in the church group workshops. One-third reported that their husbands refused to use condoms and/or reacted with anger to the request that they do so, one-third said they were able to talk to their husbands about

HIV/AIDS but were convinced by their husbands that the couple was not at risk, and one-third reported that their husbands had agreed "in principle" to use condoms. Participants noted a need to organize workshops for men, emphasizing the challenges women encountered in attempting to negotiate safer sex with their spouses.

As these examples illustrate, efforts to expand beyond the individual level show promise for reducing women's risk of HIV infection. However, because many women cannot control their male partners' behavior, there is an urgent need to focus prevention efforts on heterosexual men and address how male sexuality and gender-related factors contribute to the transmission of HIV.

REFOCUSING HIV PREVENTION EFFORTS ON MEN

For all their sexual activity, for all the instances of sexual distress and anguish they inflict upon young women, young men pursue and are left to pursue sex and their understanding of it in almost total silence and in the absence of support. It is not surprising, therefore, that they get it wrong so often. (Dowsett, Aggleton, Abega, Jenkins, Marshall, Runganga, Schifter, Tan & Tarr 1998 305)

It has long been recognized that health outcomes are directly affected by gender-related factors, yet it is only recently that male gender roles and notions of masculinity have been explicitly considered in HIV prevention. This shift was prompted by the realization that a woman who is at risk from her partner's behavior rather than her own, or who lacks power in her personal relationships, will have limited ability to reduce her risk of HIV infection (Ehrhardt 1992; Logan et al 2002; Seal & Ehrhardt 2004). To address this reality, interventions must begin to address gender-related issues among men as well as women (Gupta 2000).

Few interventions that focus specifically on men have been developed, but discussions of how best to do so are becoming more common in the literature. A meta-analysis of 30 randomized HIV prevention interventions for adult heterosexuals identified just three programs exclusively for men (Logan et al 2002). Recently, Seal and Ehrhardt (2004) recommended that efforts to promote behavior change among heterosexual men

incorporate risk reduction messages that take into account existing sexual behavior patterns (e.g., promote condom use with non-primary partners rather than attempting to eliminate sexual activity with multiple partners) and build upon societal gender role norms (e.g., expand the notion of men as initiators of sexual activity by teaching men to initiate safer sex efforts). Other scholars stress the need to identify approaches that help heterosexual men recognize how their sexuality contributes to their own and their female partners' risk of HIV/AIDS (e.g., Campbell 1997; Gupta 2000). Attempts to do this can articulate how male sexuality puts both men and women at risk of HIV transmission by raising several key considerations. First, it should be emphasized that masculinity is culturally, socially and historically constituted (Kilmartin 2000) and can be expressed in many different forms (Courtenay 2000). Next, it must be acknowledged that men's behavior is constrained by traditional expectations about gender and these traditional models of masculinity place both men and women at heightened risk for HIV infection (Gupta 2000). In general, masculinity has been linked to poor health behaviors. Relevant to sexual behavior, men's health behaviors often demonstrate a dominant (hegemonic) notion of masculinity: a denial of weakness, virility, appearance of being strong, emotional and physical control. It is often in the pursuit of power and privilege that men are led to harm themselves (Courtenay 2000; Kandrack, Grant, & Segall 1991) and subsequently women. Traditional masculinities sometimes encourage men to force unwilling partners into sex, reject condom use and view drinking as a confirmation of their manhood (Campbell 1997; Heise 1995). Finally, it must be recognized that masculinities are tied to hierarchy and power relations: each culture or group shows more dominant and subordinate forms of masculinity (e.g., the masculinity of a sports figure may be valued more highly than that of a schoolteacher).

Although HIV prevention programs for heterosexual men have not been explicitly based on these constructs, community based interventions and empowerment approaches aimed at changing men's sexual behavior have been undertaken in the gay and bisexual communities in the U.S. (Sikema & Kelly 2000). For example, the

Mpowerment program, which builds supportive risk-reduction communities of young gay and bisexual men (Hayes, Rebchook, & Kegeles 2003), has been successful in fostering safer sexual behavior. The program was initially implemented in Eugene, OR; the delayed intervention comparison site was Santa Barbara, CA (Kegeles & Hays 1996). The program was designed by a "Core Group" of young men with input from a Community Advisory Board. Activities were aimed at diffusing HIV/AIDS prevention information and condom promotion messages through peer outreach, establishment of social settings where young men could gather, and organization of events that would provide outreach opportunities, including activities as diverse as house parties, picnics and art shows. Prevention messages were transmitted through small groups, informal outreach, and a media campaign. Approximately 100 gay men aged 18-29 from each community were assessed at pre- and post-intervention via mail surveys. The intervention site had a decrease in the proportion of men engaging in unprotected anal intercourse overall (41% to 30%), with non-primary partners (20% to 11%) and with a boyfriend (59% to 45%). No comparable changes occurred in the comparison group, suggesting the power of a collective approach that builds on community strengths.

There are also powerful lessons to be learned by looking at how countries around the world are addressing the heterosexual HIV/AIDS epidemic. For example, social marketing campaigns have been successfully implemented in several countries in Africa. In Zaire, a television soap opera was developed as part of a larger campaign to promote gender equity and safer sex. After famous actors were seen negotiating condom use in bedroom scenes, almost three-quarters of viewers said they were motivated to change their behavior (Communication Initiative 2004); furthermore, reports of mutual fidelity increased from 28.5 percent to 46 percent and condom sales increased by 443 percent within a one-year period (Ferrerros, Mivumbi, Kakeru, & Price 1990, in Wingood & DiClemente 2000). National level programs in other countries, including Switzerland's "STOP AIDS" campaign and Thailand's "100% Condom Program" support the notion that it is possible to bring about behavior change in heterosexual men (Auer-

bach & Coates 2000).

The international community has also responded to the message that men are especially crucial in the prevention of HIV. One example is a project being implemented by Instituto PROMUNDO, a non-governmental organization based in Rio de Janeiro, Brazil (Horizons 2004). This ongoing project is aimed at reducing HIV risk behaviors and sexual violence by changing young men's attitudes about gender roles and sexual relationships. In a quasi-experimental study, 708 young men from three different low-income areas of Rio de Janeiro were assessed before their communities were assigned to one of three intervention conditions: group sessions led by adult facilitators; community-wide social marketing campaign plus group education; and delayed intervention (control community). Participants are being assessed at 6- and 12-months on key indicators (e.g., gender role beliefs, violence, HIV-related behavior) and qualitative interviews are being conducted with a sub-sample of participants and their regular sexual partners. At baseline, endorsement of less equitable gender norms was significantly associated with higher incidence of sexually transmitted infections (STI), lack of contraceptive use, and physical and sexual violence against a current or recent partner. Preliminary findings from the two intervention sites indicate that a significantly smaller proportion of respondents supported traditional gender norms after being exposed to the intervention. Based on 6- and 12-month follow-up data, significant reductions in STI symptoms were seen in both intervention communities, and significant increases in condom use with a primary partner were seen in the combined intervention community. Moreover, changes in gender norms were associated with changes in HIV/STI risk outcomes. The findings demonstrate that interventions focused on gender dynamics can be successful in reducing men's sexual risk behaviors. The larger magnitude of effects in the combined intervention as compared to the group education intervention suggests the importance of community support for individual behavior change.

These examples support the notion that focusing on gender-related considerations and exploring the implications of traditional masculinity for men's sexual behavior may lead to changes in attitudes and behaviors

linked to heterosexual transmission of HIV. Comparable interventions are lacking in the U.S. so it is impossible to tell how successful this type of program might be in the U.S. context. Nonetheless, the development of male-focused interventions represents an important direction for future research. One concern is whether men will participate in such interventions. There are some indications that men are less likely than women to take part in interventions. For example, half of non-participation in El-Bassel et al.'s (2003) couples study was due to male partner refusal. In the NIMH Multisite HIV Prevention Trial (1998), which recruited individuals to participate in small group interventions, only 86 percent of potential male participants who were screened at STI clinics and determined to be eligible for the study actually completed baseline interviews, compared to 91.5 percent of eligible female participants screened in the same clinics and 95 percent of women recruited in health serving organizations. Innovative strategies may be needed to overcome men's reluctance to take part in health promotion programs.

One potential avenue for reaching general populations of men in HIV prevention efforts involves bringing prevention programs to men's natural settings. One obvious setting is the workplace, which has been the context for information-based HIV programs in the U.S. (Wilson, Jorgensen, & Cole 1996). Taking this idea further, an innovative program for migrant gold miners in South Africa focused on behavioral change and attempted to take into account the broader social contexts affecting HIV transmission (Campbell & Williams 1999). Preliminary work by Campbell and colleagues examined mine workers' notions of masculinity and found that HIV prevention programs that target individual behavior change are minimally effective (Campbell 1997). Instead, the project viewed HIV transmission as a community problem. In addition to the mine workers, the program targeted the communities surrounding the mines, where workers conducted their social and sexual lives. The project used both traditional healers and biomedical practitioners; was managed not only by the mine management but by unions, grassroots organizations, and national health workers; and utilized community-based and peer outreach. Although the intervention showed only limited success (Will-

iams, Taljaard, Campbell, Gouws, Ndhlove, van Dam, Carael, & Auvert 2003), the strategy of embedding HIV prevention programs in the workplace and the larger community offers a model for future programs.

Other projects have identified additional venues for engaging men in HIV/AIDS prevention programs. One program in Kenya uses soccer as a natural meeting place for discussing HIV/AIDS and safer sex (UNICEF 2004). The Kibera Community Self-Help Programme, a local non-governmental organization supported by UNICEF, helps young volunteers conduct informal meetings about HIV after soccer matches in communities that have been heavily affected by HIV/AIDS. The volunteers create songs and impromptu theater in the hopes of changing the behavior and attitudes of their friends and kinsmen. Unstructured grassroots programs such as this do not readily lend themselves to randomized controlled evaluations and the impact of many similar programs around the world has not been assessed; despite this, they offer creative ideas for how to reach men.

In sum, the increased attention paid in recent years to developing interventions that explicitly address gender-related issues and target heterosexual men has yielded encouraging results and provides a basis for future interventions that will reduce women's risk of exposure to HIV. At the same time as the field of HIV/AIDS prevention advances to stem the heterosexual transmission of HIV, though, the epidemic is shifting and new populations of women at heightened risk are emerging.

FUTURE CHALLENGES FOR HIV/AIDS PREVENTION AMONG WOMEN IN THE U.S.

I don't even know if I made the conscious effort to decide yes, this is the time and I'm actually gonna do it [have intercourse]. It just kind of happened which as I look back I feel that's unfortunate. I wish I had been able to think about it more and had been more assertive in saying, "whoa, I don't know if I'm ready at this particular time." (Latina woman describing her first sexual intercourse; Raffaelli 2001)

It is impossible to predict with any degree of certainty how the HIV/AIDS epidemic will unfold in the next 25 years in the U.S. However, there are indications that prevention programs addressing several currently ne-

glected populations of women are needed. These include older women, women who do not self-identify as heterosexual yet engage in sexual intercourse with male partners, and teenage girls. In this final section, we briefly highlight considerations for prevention in these groups.

Sexuality is a core aspect of the human experience throughout the lifespan (Ehrhardt & Wasserheit 1991; Levy 1994), yet the literature is largely silent on the issue of HIV/AIDS among older women. In an early analysis of women infected with HIV through heterosexual contact, women aged 50 and over at the time of their AIDS diagnosis were compared to women under 50 years old at the time of diagnosis (Schable, Chu, & Diaz 1996). The two groups differed in ethnicity: women aged 50 or older at the time of diagnosis were more likely to be White or Hispanic/Latina, whereas those under 50 at initial diagnosis were more likely to be African American. Older women were more likely to have been exposed to HIV through sex with an HIV-infected man whose risk of exposure was unknown (59% vs. 42% of women aged under 50 at the time of diagnosis), and less likely to report sex with an injection drug user (31% vs. 48%). Hillman and Broderick (2002) identified HIV risk factors for post-menopausal women, including biological risks (e.g., thinning vaginal walls due to lower levels of estrogen after menopause are more likely to tear during intercourse, facilitating transmission of HIV), condom-related factors (e.g., lack of contraceptive need and limited socialization for sexual communication with potential partners), and partner-related issues (e.g., lack of knowledge about partners' potential risk behaviors). Because of increased survival rates as AIDS treatments improve, and the possibility of higher levels of sexual activity as elderly men take advantage of newly developed and aggressively marketed anti-impotence drugs, HIV/AIDS among older women is likely to increase in the future. Thus, an important direction for future prevention efforts will involve developing interventions for older women and their partners.

Women who have sex with women represent another group that will need increased attention as the epidemic progresses. This may seem counter-intuitive, as there are few documented cases of female-to-female transmission of HIV. However, case reports

of female-to-female transmission, as well as the well documented female-to-male transmission, show that vaginal secretions and menstrual blood are potential paths of transmission through mucous membranes (Hughes & Evans 2003; Morrow 1995). In an attempt to better understand the association between female-female sexual behavior and sexually transmitted infections, Bauer and Welles (2001) studied 286 women recruited at a gay/lesbian/bisexual pride rally. One key finding was that 13 percent of women with only female partners reported a history of STI, a rate clearly counter to a "no risk" group. Frequency of female-female sexual exposure was independently associated with increased odds of STI when controlling for female-male sexual behavior. Moreover, in 98 percent of cases of AIDS among women who have sex with women, risk factors other than female-female sex were present (e.g., injection drug use, sex with high-risk men) (CDC 2003b). Because sexual identity and sexual behavior may differ, there is a need to intervene with women who identify as lesbian but engage in activities that put them at heterosexual risk of HIV infection.

Adolescents represent perhaps the most promising population for intervention efforts, because they are in the process of establishing lifetime sexual behavior patterns. This population has not been neglected; as discussed below, many interventions targeting young people have been developed. Yet there are indications that current HIV-prevention programs are not having a substantial impact on young people in the U.S. As noted earlier, young women are increasingly contracting HIV through heterosexual transmission, and account for almost half of new HIV infections among 13-24 year olds. A discussion of factors contributing to young women's risk of HIV/AIDS is beyond the scope of this paper; risk factors include biological vulnerability due to the immaturity of the reproductive tract, which facilitates transmission of HIV, as well as psychological and social factors linked to sexual behavior (see Rotheram-Borus, O'Keefe, Kracker, & Foo 2000). Prevention efforts for adolescent girls are complicated by several considerations. First, sexual intercourse in this age group may be the result of male pressure or coercion, particularly among young teens (SIECUS 1997). Differential power between partners is also a factor; young women who have sex with

older partners are particularly vulnerable to engaging in unprotected sex (Darroch, Landry & Oslak 1999). Intervention programs for adolescents must also consider how sexual behavior changes as youth gain sexual experience and begin forming partnerships. For example, condom use is common when teens start having sex, but as adolescent girls begin having sex regularly they tend to shift to other methods of birth control (Jemmott & Jemmott 2000). Condom use is also more typical at the start of relationships; as couple becomes more committed and trust is established, condom use decreases and use of other methods becomes more common (e.g., Fortenberry, Wanzhu, Harezlak, Katz, & Orr 2002). It is not clear to what extent HIV risk reduction interventions are effective in addressing these aspects of adolescent sexuality.

A number of interventions have demonstrated success in fostering safer sexual behavior among adolescents, although studies are often limited by short follow-up periods and low rates of sexual activity at baseline. One review found that over half (57%) of 23 HIV interventions evaluated in randomized controlled trials achieved significant sexual risk reductions (Pedlow & Carey 2003; Kim, Stanton, Li, Dickersin, & Galbraith 1997). A meta-analysis of interventions conducted in community samples of adolescents revealed a significant overall effect for condom use (Jemmott & Jemmott 2000). Finally, in a review of school-based interventions aimed at decreasing teen pregnancy and HIV, Kirby (2000) reported that some comprehensive sex education programs were successful in promoting sexual risk reduction.

Despite these encouraging overall results, it is unclear whether teenage girls and boys typically show the same level of risk reduction. The effectiveness of interventions for female adolescents is not reported separately in most meta-analyses and reviews, but there is some evidence that intervention effects tend to differ by gender. In some cases intervention effects are weaker for girls than boys (e.g., Stanton, Xiaoming, Ricardo, Galbraith, Feigelman & Kaljee 1996); in other cases, interventions show differential effects for male and female teens. For example, St. Lawrence and colleagues (1995) compared the efficacy of a single-session HIV/AIDS education session with an eight-session behavioral skills training intervention in a

sample of 246 African American adolescents recruited in a public clinic serving low-income populations. In this randomized control trial, participants in the behavioral skills intervention showed reduced levels of risk behaviors compared to youth in the control group through the one-year follow-up period. However, boys and girls in the intervention group showed different patterns of behavior at baseline, and there were gender differences in observed behavior post-intervention such that boys decreased their sexual risk-taking whereas girls maintained their initial (lower) levels of sexual risk-taking. In contrast, girls and boys in the educational control condition tended to increase their sexual risk-taking over time (if already sexually active at baseline) or initiate sexual intercourse (if they were inexperienced at baseline). Thus, the intervention appeared to help girls avoid increased sexual risk over time. Although it is impossible to tease apart which of the eight sessions are responsible for the specific effects, the intervention included sessions on behavioral skills to resist sexual pressure and verbal coercion, and the development of specific plans for avoiding unwanted sex.

The need to address gender-related issues is reflected in results of a recent intervention with sexually experienced African American young women (aged 14-18) who were randomly assigned to participate either in an intervention that emphasized ethnic and gender pride, HIV-related knowledge and skills, and healthy relationships or in a nutrition and exercise control intervention (DiClemente, Wingood, Harrington, Lang, Davies, Hook, Oh, Crosby, Hertzberg, Gordon, Hardin, Parker & Robillard 2004). Relative to the control participants, intervention participants showed decreases in multiple measures of sexual risk behaviors (e.g., unprotected sex, inconsistent condom use) that were sustained over a 12-month follow-up period.

Based on these findings, it appears that additional consideration of gender-related issues could provide valuable insight regarding how best to promote sexual risk reduction among both female and male adolescents. By fostering safer sexual behavior in teenagers, prevention programs should ultimately contribute to lower HIV/AIDS rates as young people grow up and move into adulthood.

CONCLUSIONS

It is becoming increasingly clear that prevention efforts must move beyond a focus on individual women to curb heterosexual transmission of HIV. Interventions must consider the realities of women's lives, take into account the contexts in which sexual encounters occur, and involve men as well as women. Moreover, many women's only risk of HIV infection results from having unprotected sex with a primary partner; thus, broad-based prevention efforts will be needed to supplement intensive interventions aimed at "high risk" populations.

The move from targeted to general interventions is likely to be challenging in the U.S. Because the HIV/AIDS epidemic has been concentrated among population sub-groups, interventions have tended to be focused rather than general. There has been resistance to using the mass media for HIV prevention in the U.S. (Ehrhardt 1992), despite evidence of the effectiveness of marketing approaches in changing attitudes and behavior (Auerbach & Coates 2000). School-based interventions — which have the potential to reach virtually all individuals in the country in a cost-effective manner — are subject to political pressures that reduce their effectiveness (DiClemente 1993). Currently, local and federal policies in the U.S. constrain the content of school-based programs; federal funding is available to states willing to provide "abstinence-only-until-marriage" sexuality education (but not comprehensive sexuality education), and 35 percent of school districts require abstinence-only programs (Pardini 2002/2003). This is unfortunate because there is mounting evidence that such programs are largely ineffective, whereas comprehensive sex education is effective in fostering risk reduction without increasing sexual activity among teens (see Jemmott & Jemmott 2000; Kirby 2000).

In countries that hold more open sexual attitudes, comprehensive programs aimed at the general population have shown considerable success. For example, in Sweden (which has a low overall rate of HIV/AIDS), sexual health is a national priority and mandatory sex education in all public schools pre-dates the onset of the HIV/AIDS epidemic (Herlitz & Steel 2000). The curriculum is age-graded and developmentally appropriate, beginning in primary school with basic re-

productive information and progressing to more detailed information about contraception and sexually transmitted infections in secondary school. A network of regional health clinics provides access to reproductive information and care. The effectiveness of Sweden's HIV/AIDS program has been evaluated through periodic cross-sectional surveys of random population samples. Among other observed changes, condom use among young people increased from 1987 to 1997. It is noteworthy that Sweden's openness toward sexuality is associated not with sexual permissiveness, but "rather the ability to make informed and responsible decisions regarding sexuality" (Herlitz & Steel 2000 889).

As heterosexual transmission of HIV becomes more common in the U.S., it will be necessary to initiate a national dialogue about how to protect everyone at potential risk from exposure to HIV/AIDS. New risk reduction approaches are needed that take into account the complex interplay of factors contributing to HIV risk among heterosexual women. In particular, there is an urgent need to refocus prevention efforts on men and boys, and identify theoretical models that provide avenues for behavior change interventions among heterosexual males. In this paper, we have suggested that program developers and policy makers in the U.S. can learn from the innovative strategies that have been implemented around the globe. By identifying and implementing participatory and empowerment-based approaches, it will ultimately be possible to reduce the impact of heterosexual transmission of HIV/AIDS in the U.S.

ENDNOTE

¹ This paper was completed in 2004, but publication was delayed due to factors beyond the author's control. Therefore, work published after 2004 was not considered.

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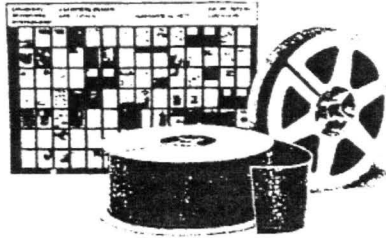
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