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Evidence-Based HIV/STD Prevention Intervention for Black Men Who Have Sex with Men

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Summary

This report summarizes published findings of a community-based organization in New York City that evaluated and demonstrated the efficacy of the Many Men, Many Voices (3MV) human immunodeficiency virus (HIV)/sexually transmitted disease (STD) prevention intervention in reducing sexual risk behaviors and increasing protective behaviors among black men who have sex with men (MSM). The intervention addressed social determinants of health (e.g., stigma, discrimination, and homophobia) that can influence the health and well-being of black MSM at high risk for HIV infection. This report also highlights efforts by CDC to disseminate this evidence-based behavioral intervention throughout the United States. CDC's Office of Minority Health and Health Equity selected the intervention analysis and discussion to provide an example of a program that might be effective for reducing HIV infection- and STD-related disparities in the United States.

3MV uses small group education and interaction to increase knowledge and change attitudes and behaviors related to HIV/STD risk among black MSM. Since its dissemination by CDC in 2004, 3MV has been used in many settings, including health department- and community-based organization programs. The 3MV intervention is an important component of a comprehensive HIV and STD prevention portfolio for at-risk black MSM. As CDC continues to support HIV prevention programming consistent with the National HIV/AIDS Strategy and its high-impact HIV prevention approach, 3MV will remain an important tool for addressing the needs of black MSM at high risk for HIV infection and other STDs.

Introduction

Major advances in the prevention and treatment of human immunodeficiency virus (HIV) and care for HIV-infected persons have occurred during the past 3 decades. One important advance is development of efficacious behavioral interventions that reduce HIV-related sex and drug-injection risk behaviors and incident sexually transmitted diseases (STDs) among at-risk populations (1). Biomedical advances, such as antiretroviral therapy, afford persons living with HIV long and productive lives and effectively prevent transmission to uninfected persons (2–5). Despite these prevention efforts, approximately 1.2 million adolescents and

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adults live with HIV, and 41,800–62,900 persons acquire new HIV infections each year in the United States (6,7).

Disparities in HIV/STD prevention and care persist among racial/ethnic minority populations and sexual minorities. Among blacks, the prevalence of HIV is greater than that among all other racial/ethnic groups (8). Despite representing only 12.6% of the U.S. population in 2010 (9), blacks accounted for 45% of all new HIV infections that year (8). Black men have a higher proportion of HIV infections at all stages of disease—from new infections to deaths—than men of other racial/ethnic groups (8). HIV is consistently among the 10 leading causes of death for black men aged 15–64 years (10).

Gay, bisexual, and other men who have sex with men (MSM), and black MSM in particular, consistently represent the largest proportion of HIV-infected persons in the United States (11). Although MSM represent approximately 2% of the U.S. population (12), they accounted for 63% of all new HIV infections in 2010, and black MSM accounted for a larger proportion of new HIV diagnoses than did white or Latino MSM (8). Each year during 2006–2009, HIV incidence increased an estimated 12.2% among black MSM aged 13–29 years, whereas incidence remain stable among white and Latino MSM (7). More new HIV infections occurred among black MSM aged 13–29 years (6,500 diagnoses in 2009) than among white MSM aged 13–29 and 30–39 years combined (6,400 diagnoses in 2009) (7). Black MSM also have higher rates of STDs, including primary and secondary syphilis (13,14) and chlamydia (15), than do their white and Latino counterparts.

Higher rates of HIV and other STDs for black MSM than for other MSM are well documented (16), and research has identified several explanations for the excess risk (17,18). These include higher background prevalence of HIV in the community that can lead to exposure to an infected partner despite less risky behavior; higher prevalence of other STDs in the community that can facilitate HIV infection; partnerships with men of unknown HIV serostatus; infrequent HIV testing and later diagnosis of HIV infection; limited access to antiretroviral therapy; stigma, homophobia, and social discrimination; and financial hardship (19–24).

However, black MSM reported fewer sex and drug-risk behaviors than did white MSM, and behaviors such as commercial sex work and sex with known HIV-positive persons did not significantly differentiate these groups (17). A cross-sectional study conducted in 2005 and 2006 reported that young black and Latino MSM with older partners engaged in higher rates of sexual risk behaviors and had a greater likelihood of unrecognized HIV infection than did those with younger partners, possibly because of increased prevalence of HIV infection among older partners (25). Many black MSM struggle with negative perceptions of themselves because of internalized racism; marginalization; and feelings of isolation from their communities, families, and religious organizations (26).

A combination of social, cultural, and personal factors probably prevents black MSM from accessing health-care services (27,28). Thus, HIV/STD prevention programs for black MSM must target sociocultural determinants of health, in addition to behavioral risk reduction, to successfully reduce disparities and improve health equity (29). However, when the Many

Men, Many Voices (3MV) intervention began in 1997, no efficacious, culturally appropriate HIV/STD risk-reduction interventions had been developed for black MSM since acquired immune deficiency syndrome (AIDS) was first recognized in the 1980s (30).

Background

Two community-based organizations (CBOs), in collaboration with an STD/HIV prevention training center, created 3MV in 1997 (31). 3MV has been delivered by various CBOs serving black MSM since its development. Because of an urgent need for risk-reduction interventions for black MSM, CDC has nationally disseminated 3MV since 2004. However, the efficacy of 3MV had never been rigorously evaluated in a randomized controlled trial.

To learn from and assess community-based HIV prevention practice, CDC initiated the Innovative Interventions Project (32). The project aimed to identify and rigorously evaluate culturally appropriate HIV prevention interventions that CBOs were delivering to minority populations at high risk for HIV infection in their communities and that showed the possibility of being effective in reducing risk behaviors. In 2004, the Innovative Interventions Project supported People of Color in Crisis, Inc., a CBO located in Brooklyn, New York, to evaluate the efficacy of the 3MV HIV/STD prevention intervention in a randomized controlled trial (31).

This report summarizes published findings from a CBO in New York City to evaluate and demonstrate the efficacy of 3MV in reducing sexual risk behaviors among black MSM (31). In addition to addressing individual-level risk behaviors, 3MV addresses social determinants that can potentially influence HIV-related outcomes among black MSM at very high risk for HIV infection. For example, the intervention positively influences the identity and value of being a “black gay man,” thereby reducing the effects of stigma, racism, homophobia, and discrimination that can influence risk behavior. This report also describes efforts by CDC to disseminate the evidence-based 3MV behavioral intervention throughout the United States.

CDC's Office of Minority Health and Health Equity selected the intervention analysis and discussion that follows to provide an example of a program that might be effective in reducing HIV-related disparities between black MSM and other persons in the United States. Criteria for selecting this program are described in the Background and Rationale for this supplement (33).

Intervention

3MV is a seven-session, small-group intervention for black MSM that aims to reduce the behavioral risks for acquiring HIV and other STDs and increase health protective actions (34). The intervention focuses on helping black MSM better understand the social, cultural, and behavioral determinants that affect their HIV/STD risk. Moreover, 3MV focuses on perceptions of personal susceptibility to HIV and other STDs; knowledge of STDs and the interrelation between STDs and HIV; awareness of risk-reduction and health-promotion behaviors; skills and self-efficacy related to consistent condom use, condom negotiation, and partner communication; and decisions about testing for HIV/STDs.

Two trained peers co-facilitate the intervention sessions and serve as role models to support risk-reduction efforts. The intervention can be delivered as seven weekly sessions or as a 3-day weekend retreat (34). Behavior change theories and models guiding the development of the intervention include social cognitive theory (35), the behavioral skills acquisition model (36), the transtheoretical model of behavior change (37), and the decisional balance model (38). The intervention sessions involve group discussions, games, and other activities to convey factual information; role play to enhance skill building; and development of personal risk-reduction plans ([Table 1](#)).

The personal risk-reduction plan is an innovative component of the intervention that uses menus of behavior change options for HIV/STD risk reduction rather than a singular emphasis on consistent condom use that is common in other prevention interventions for MSM. Black MSM also benefit from participation in the intervention by forming collegial relationships with other black MSM to support the maintenance of their risk-reduction efforts.

Most persons who are trained to deliver 3MV are college educated, although no minimum education is required (34). Facilitators participate in 32 hours of training and skills building during 4 consecutive days. Before they can deliver 3MV, facilitators are trained to know about HIV/STD and about issues such as racism, homophobia, stigma, and discrimination that can affect black MSM. Once trained, facilitators are supervised by program managers of implementing service-provider organizations to ensure fidelity of their delivery to the intervention curriculum (34).

Evaluation Methods

During August 2005–November 2006, People of Color in Crisis, Inc., and its university research partners evaluated the efficacy of 3MV among black MSM in New York City using a randomized controlled trial design (31). The study sample comprised 338 black MSM of negative or unknown HIV serostatus. Participants were randomly assigned to the 3MV intervention condition (164 men) or to a wait-list control condition (174 men). The intervention was delivered as a 3-day weekend retreat at a resort in upstate New York. Participants who were randomized to the control condition were scheduled to receive 3MV after completing the 6-month follow-up assessment. The Human Subjects Research Review Committee at Binghamton University, State University of New York approved the study protocol.

Participants' knowledge, attitudes, and behaviors were assessed by using audio computer-assisted self-interview at baseline and at 3- and 6-months postintervention follow-ups. Behavioral outcomes assessed were number of episodes of unprotected (without a condom) insertive and receptive anal intercourse with main and casual male partners; number of male sex partners; number of episodes of condom-protected anal intercourse acts (analyzed as always protected [100%], sometimes protected [1-99%] versus never protected [0%]); and self-reported testing for HIV and other STDs, including gonorrhea, syphilis, and chlamydia.

Retention of study participants exceeded 70% in both study conditions at all follow-up assessments. Outcome analyses used an intent-to-treat approach in which participants were

included in the analysis as originally assigned, and generalized estimating equation models were used to assess intervention efficacy across the entire study period. Details about participant eligibility criteria, screening procedures, study implementation methods, data collection, and statistical analyses are reported elsewhere (31).

Published Findings

The trial indicated that 3MV is efficacious in reducing HIV/STD risk behaviors and increasing health protective actions of black MSM (31). Relative to men assigned to the control condition, 3MV intervention participants reported a 25% greater reduction in the number of male sex partners at the 3-month follow-up assessment (rate ratio [RR] = 0.75; 95% confidence interval [CI] = 0.57–0.98); a 66% greater reduction in number of episodes of unprotected anal intercourse with casual male partners at the 6-month follow-up assessment (RR = 0.34; CI = 0.14–0.83); and a 51% greater reduction in the number of episodes of unprotected insertive anal intercourse with casual male partners across the entire study period (RR = 0.49; CI = 0.28–0.87). Intervention participants also exhibited a trend for greater consistent condom use during receptive anal intercourse with casual male partners throughout the entire study period (odds ratio [OR] = 1.55; CI = 0.99–2.43). Finally, intervention participants had an 81% greater odds of testing for HIV at the 6-month follow-up (OR = 1.81; CI = 1.08–3.01) and 33% greater odds of testing for HIV across the entire study period (OR = 1.33; CI = 1.05–1.68) than control participants. There was no statistically significant intervention effect on unprotected anal intercourse or condom use with main male partners, although these effects were in the protective direction for intervention participants. 3MV did not significantly increase testing for syphilis or chlamydia.

Limitations

Limitations of the efficacy study included the use of self-reported sexual risk behaviors, limited generalizability of findings based on delivery of the intervention as a 3-day weekend retreat rather than as weekly intervention sessions, and whether 3MV was effective in reducing risk behaviors under real-world conditions. To address the latter limitation, CDC funded three CBOs in 2008 to conduct outcome monitoring of 3MV to determine the effectiveness of the intervention in reducing HIV-related risk behaviors among young men of color who have sex with men (39). Men in the intervention group showed significant reductions, relative to baseline levels, in unprotected anal intercourse at 3-month (OR = 0.38; CI = 0.27–0.52) and 6-month (OR = 0.44; CI = 0.32–0.61) postintervention assessments (39). In addition to replicating the efficacy of study findings, the results of this outcome monitoring initiative provide evidence of the effectiveness of 3MV delivered by CBOs in reducing unprotected sex among young men of color who have sex with men. Additional studies are needed to demonstrate the effectiveness and generalizability of 3MV among diverse black MSM populations, delivery settings, and geographic regions.

Discussion

This was the first study to demonstrate the efficacy of an HIV/STD prevention intervention for reducing sexual risk behaviors and increasing HIV testing among black MSM. 3MV has the capacity to reduce risk behaviors associated with HIV-related disparities among black

MSM because the intervention was designed specifically to address their unique prevention needs. Moreover, the intervention's impact on increasing HIV testing is critical for black MSM who might be unaware of their HIV serostatus and can segue to additional prevention and treatment services. On the basis of the findings of the efficacy trial and rigor of study methods, CDC identified 3MV as a “best evidence” evidence-based behavioral intervention in 2009, and the program is listed in the online Compendium of Evidence-based HIV Prevention Interventions (40).

Since 2004, when CDC first disseminated 3MV, 899 members of HIV prevention service organizations completed one of the 66 trainings of facilitators offered by CDC (Table 2). These 899 members represent 245 CBOs, 36 health departments, and 82 other agencies. Of the 153 CBOs funded directly by CDC to implement HIV behavioral prevention interventions in 2012, a total of 24 (16%) delivered 3MV to black MSM and other MSM of color (including Latinos, Asian/Pacific Islanders, and American Indian/Alaska Natives) in 12 states, the District of Columbia, and Puerto Rico. Persons from 37 states, the District of Columbia, and Puerto Rico have been trained to facilitate 3MV. 3MV remains the only HIV/STD prevention intervention with proven efficacy for black MSM.

After results from the efficacy trial described above were published and the intervention's inclusion in CDC's Diffusion of Effective Behavioral Interventions (DEBI) project was affirmed (41), CDC updated the 3MV intervention package in 2011. Consistent with developments in the literature (42,43), components of the intervention that address the effects of discrimination, stigma, racism, and homophobia were strengthened, and information about HIV and STDs was updated. The new intervention package now provides detailed guidance on implementing the intervention by using a weekend retreat format as an alternative to a multisession weekly format. The new intervention materials and training curriculum were completed, distributed to all directly funded CBOs and health departments delivering 3MV, and made available to the public in January 2011 (www.effectiveinterventions.org) (34). Continuous quality improvement efforts are ongoing to build service-provider capacity related to recruitment, retention, adaptation, and evaluation.

The cost-effectiveness of 3MV was not ascertained in the efficacy trial. However, according to the 3MV Implementation Manual (34), the estimated annual cost of delivering six cycles of the intervention to 120 clients (i.e., 20 clients per cycle) is \$142,000 or \$1,183 per client based on 2010 dollars. The estimated lifetime treatment cost for a person in whom HIV infection is newly diagnosed is \$379,668 (in 2010 dollars and discounted to time of infection) (44). Because of the very high rates of HIV among black MSM and substantial lifetime treatment cost of each new HIV infection, the proven efficacy of 3MV in modifying antecedents of HIV infection and testing behavior supports its dissemination and implementation with high expectations of potential economic and public health benefits.

Conclusion

The 3MV intervention is an important component of a comprehensive HIV and STD prevention portfolio for at-risk black MSM. With continuous CDC support since 2004, the

intervention has been delivered to thousands of black MSM and other MSM of color by CBOs, health departments, and other service providers. Black MSM who participate in 3MV take steps to reduce their personal risk behaviors and raise awareness about the importance of STD and HIV prevention, testing, and treatment among their partners and social networks that can contribute to reducing HIV and STD incidence and prevalence in their communities. As CDC continues to support HIV prevention programming consistent with the National HIV/AIDS Strategy (45) and its high-impact HIV prevention approach (46), 3MV will remain an important tool for addressing the needs of black MSM at high risk for HIV infection and other STDs.

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Table 1

Sessions and objectives of Many Men, Many Voices, an HIV/STD prevention intervention for black men who have sex with men

Session	Description of objectives
1. Black MSM and dual identity	<p>Influence of personal factors, familial norms, social networks, and social attitudes and norms on behavior</p> <p>Influence of racism and homophobia on behavior, including dual-identity struggle of being a black man and a gay man</p> <p>Explore how reactions of family, religious community, and society lead to nondisclosure of sexual identity, isolation, and fear</p> <p>Understand how internalized racism and homophobia lead to negative emotions and values, and can be used to develop a positive self-concept</p> <p>Understand how personal and social factors lead to high-risk sexual and substance use behaviors and contribute to disparities in HIV/STDs</p> <p>Recognize how sexual roles/positions (i.e., top versus bottom) influence HIV/STD risk</p> <p>Increase knowledge of HIV and other STDs</p>
2. HIV/STD prevention for black MSM: the roles and risks for tops and bottoms	<p>Understand how having an STD increases chance of acquiring or transmitting HIV</p> <p>Understand factors that determine STD/HIV risk and can be used for prevention options</p> <p>Learn why HIV/STD epidemic is increasing for black MSM</p> <p>Understand how black MSM are at high risk even if they engage in low-risk behaviors</p> <p>Use of “transmission puzzle” to create menu of prevention options</p> <p>Understand how personal sexual choices increase HIV/STD risk behavior</p>
3. HIV/STD risk assessment and prevention options	<p>Increase awareness of how partner selection and sexual decisions impact HIV risk</p> <p>Increase perceived risk for getting HIV/STD</p> <p>Learn how behavior change occurs, including spiral pattern of relapses and slips</p> <p>Recognize personal barriers to change behavior</p>
4. Intentions to act and capacity for change	<p>Form intentions and agree to act on one prevention option of their choosing</p> <p>Provide social support to help build confidence in ability to implement prevention option</p> <p>Develop and practice skills related to chosen prevention option</p> <p>Identify preferred relationships</p> <p>Explore how sex role (i.e., tops and bottoms) can create power and control issues</p> <p>Explore attitudes towards sex roles and power in black communities</p>
5. Relationship issues: Partner selection, communication, and negotiation of roles for black MSM	<p>Recognize origins of relationship roles and how roles might reflect stereotypes and sexism</p> <p>Explore how relationship dynamics affect decision-making and HIV/STD risk behaviors</p> <p>Build communication and negotiation skills to practice risk-reduction options</p> <p>Develop skills in partner selection, communication, and negotiation of role</p> <p>Provide positive reinforcement for behavior-change efforts</p>
6. Social support and problem solving to maintain change	<p>Discuss experiences with chosen behavior-change options</p> <p>Build skills in correct condom use</p> <p>Build skills in problem-solving by sharing ideas</p>

Session	Description of objectives
7. Building bridges and community	Establish ongoing social support system to maintain change Describe self-development and self-growth resulting from intervention Identify prevention needs and list resources and services to access Describe need for ongoing community development to create environment where black MSM feel safe and accepted

Abbreviations: MSM = men who have sex with men; HIV = human immunodeficiency virus; STD = sexually transmitted disease.

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TABLE 2

Participation in *Many Men, Many Voices* training of facilitators — Diffusion of Effective Behavioral Interventions Project, July 2004–February 2013

3MV Intervention description	Dates of training	No. trainings	No. participants	No. CBOs represented	No. health departments represented	No. other agencies represented*
Original package	2004-Mar 2011	54	752	188	31	58
Repackaged	2011-Feb 2013	11	139	54	5	24
Spanish translation	2009-Feb 2013	1	8	3		
Total		66	899	245	36	82

Abbreviations: 3MV = Many Men, Many Voices; CBO = community-based organizations; HD = health department.

* Other agencies include academic institutions, medical centers and clinics, national nongovernmental organizations, and technical assistance providers.