AIDS Education and Prevention, 27(5), 418–431, 2015

HEALING OUR WOMEN FOR TRANSGENDER WOMEN: ADAPTATION, ACCEPTABILITY, AND PILOT TESTING

Kate L. Collier, Lisa G. Colarossi, Daphne S. Hazel, Kim Watson, and Gail E. Wyatt

Healing Our Women (HOW) is a group-level HIV risk-reduction intervention developed to address the role of prior sexual victimization in HIV risk and protective behaviors among HIV-positive women of color. This article describes the process of adapting HOW for transgender women of color in New York City in accordance with CDC guidance for the adaptation of efficacious interventions. Twenty-one transgender women were enrolled in a study to evaluate the acceptability and fidelity of the adapted intervention, and to assess HIV knowledge, depressive symptoms, coping, condom use self-efficacy, and condom use via pre- and post-intervention surveys. We found the adapted program to be feasible to implement and acceptable to participants. We also found significant decreases in depressive symptoms and increases in positive coping from pre- to post-intervention, although replication with a larger sample and a control group comparison is needed to determine efficacy with this population.

Culturally appropriate HIV preventive interventions for transgender persons, individuals whose identities do not conform to the social and cultural norms associated with their assigned sex at birth, are both scarce and urgently needed (Institute of Medicine, 2011; Operario & Nemoto, 2010). The need for such interventions stems in part from the large and disproportionate impact of HIV on transgender women. In this manuscript, we report the process of adapting an HIV risk-reduction intervention for transgender women and findings from a pilot evaluation. We use the

Kate L. Collier, PhD, MPH, and Lisa G. Colarossi, PhD, LCSW, are affiliated with Planned Parenthood of New York City. Daphne S. Hazel, EdM, was affiliated with Planned Parenthood of New York City and is now an independent consultant, New York, New York. Kim Watson is Co-founder of and affiliated with Community Kinship Life, Bronx, New York. Gail E. Wyatt, PhD, is affiliated with the UCLA Semel Institute for Neuroscience and Behavior, University of California at Los Angeles.

This research was supported by a grant from the MAC AIDS Foundation. The opinions expressed in this article do not necessarily reflect those of Planned Parenthood Federation of America, Inc. The HOW-TW curriculum materials are available from www.healingourwomen.com.

We would like to thank Pamela Skinner and Marcella Tillett from Planned Parenthood of New York City for their assistance on the project as well as the Community Kinship Life organization serving the transgender community for their consultation, training, and support to Project Street Beat of Planned Parenthood of New York City.

Address correspondence to Kate L. Collier, PhD, MPH, Planned Parenthood of New York City, 26 Bleecker St., New York, NY 10012. E-mail: kate.collier@ppnyc.org

term *transgender woman* to refer to any person "who is changing or has changed their body and lived gender role from a birth-assigned male to an affirmed female" (Center of Excellence for Transgender Health, 2011), which may or may not include the choice of surgical or medical intervention.

Transgender women are at high risk for contracting HIV. A systematic review and meta-analysis of U.S. studies found an average HIV prevalence of 11.8% among transgender women who self-reported their HIV status across 18 studies; however, the average prevalence across 4 studies in which HIV status was laboratory-confirmed was 27.7% (Herbst et al., 2008). Across the reviewed studies, African-American transgender women had the highest rates of HIV prevalence and incidence (Herbst et al., 2008). In a nonprobability sample of 517 transgender women in New York City, the setting for the current study, HIV prevalence as determined by laboratory testing was 3.5% among white participants, 48.1% among African Americans, and 49.6% among Hispanics (Nuttbrock et al., 2009).

Several reports about interventions to address HIV among transgender people have emerged in recent years. These included programs utilizing drop-in health education workshops (Nemoto, Operario, Keatley, Nguyen, & Sugano, 2005); targeted, rapid HIV testing (Shrestha et al., 2011); social marketing (Wei et al., 2011); and prevention case management (Reback, Shoptaw, & Downing, 2012). Theory-guided, multi-session, group interventions have also been developed, and we located initial evaluation reports on two such programs. All Gender Health, a 2-day, 16-hour seminar, was designed to address attitudes toward condom use, safer sex self-efficacy, and sexual risk behavior for transgender persons; the majority of its participants were white (93%), female-identified (81%), and did not live full-time in the cross-gender role (64%; Bockting, Robinson, Forberg, & Scheltema, 2005). Girlfriends is a four-session group intervention for transgender women based on the Information-Motivation-Behavioral Skills Model (Taylor, Bimbi, Joseph, Margolis, & Parsons, 2011). Content focuses on transgender stress, stigma and risks, drugs and alcohol, and personal growth and social support as well as sexual risk reduction (Taylor et al., 2011). In addition, several organizations have adapted the evidence-based intervention SISTA (Sisters Informing Sisters About Topics on AIDS) for use with transgender women (Gutierrez-Mock et al., 2009).

The interventions described above address the HIV transmission risk factors that have been most researched in transgender populations, which include engagement in sex work and syringe-sharing behaviors related to the use of hormones and silicone; as well as co-factors such as stigma and limited health care access (Bockting et al., 2005; Herbst et al., 2008; Taylor et al., 2011). Nonetheless, a specialized intervention may be needed to address an additional factor that contributes to the impact of HIV on transgender populations: exposure to violence, and in particular, forms of sexual violence such as childhood sexual abuse (CSA), sexual assault, and intimate partner violence (IPV). Exposure to sexual violence has been associated with HIV infection in women and men who have sex with men (Li et al., 2014; Mimiaga et al., 2009; Wyatt et al., 2002). Although sexual violence among transgender populations is not as well researched, available data indicate it is a considerable problem. Gender nonconformity in childhood has been identified as a significant risk factor for CSA (Roberts, Rosario, Corliss, Koenen, & Austin, 2012). Based on a review of U.S. studies, Stotzer (2009) reported that about 50% of transgender research participants had experiences of sexual violence, and that many began to have these experiences during adolescence. In a more recent study among a sample of adult transgender women with histories of sex work, 37.6% reported being raped or sexu-

ally assaulted before age 18, primarily by family members (48.5%); 29.8% reported rape or sexual assault experiences as adults (Nemoto, Bödeker, & Iwamoto, 2011).

The pathway from sexual violence to HIV can be direct (i.e., from perpetrator to victim during an act of sexual assault) or indirect, as the psychological impact of sexual violence reduces one's ability to control the timing and circumstances of sexual activity (Dunkle & Decker, 2013). Some research has specifically explored sexual violence as an HIV risk factor among transgender women. In a study of 51 ethnic minority transgender young women, 51% reported a history of forced sex but this was not associated with self-reported HIV-positive status (Garofalo, Deleon, Osmer, Doll, & Harper, 2006). However, in a study of 248 transgender persons (76% transgender women; 12% of transgender women participants reported prior sexual assault), participants with a history of sexual assault had nearly five-fold greater odds of being HIV-positive (Xavier, Bobbin, Singer, & Budd, 2005).

INTERVENTION ADAPTATION MODEL

Our efforts to identify an intervention to address trauma and HIV among transgender women were guided by the Map of Adaptation Process (MAP; McKleroy et al., 2006). The MAP guidelines assist HIV service providers in fitting interventions to local needs while retaining fidelity to core intervention elements, and they outline a systematic, iterative process with five action steps: *assess, select, prepare, pilot*, and *implement*. Select refers to final selection of an intervention and decisions regarding the level of adaptation it will require. In our case, we decided first to explore adaptation of a particular intervention that had been used successfully at our agency with (nontransgender) women, and then used assessment activities to inform intervention adaptation and organizational capacity building before making a final intervention selection. We describe how we conducted these activities to adapt a previously evaluated intervention and present evaluation results for maintenance of fidelity to the curriculum manual, acceptability to transgender women, and preliminary outcomes for participants.

ASSESSMENT AND INTERVENTION SELECTION

Project Street Beat (PSB) at Planned Parenthood of New York City (PPNYC) provides harm-reduction, educational, and supportive services to people living with HIV and those at high risk for HIV infection. PSB has offices in two of the New York City communities most affected by the HIV epidemic and also provides street-based sexual and reproductive health care on a mobile medical unit and rapid HIV testing using outreach vans. We began the process of selecting and adapting an intervention for transgender women at high risk for contracting and transmitting HIV as part of a larger effort to broaden services to transgender clients at PSB. Based on the assessment of target population needs and available interventions described above, previous experience implementing group-level interventions at PSB, and consultation with a community partner specializing in transgender support (K. Watson, CK Life), we chose to adapt the Healing Our Women (HOW) intervention.

HOW was developed by researchers at the University of California at Los Angeles to address the role of sexual trauma in HIV risk and preventive behaviors among women of color, and implemented in partnership with health care organizations in Los Angeles. An overview of the HOW curriculum and pilot implementation has previously been published (Chin, Wyatt, Carmona, Loeb, & Myers, 2004), as have

descriptions of its core elements (Wyatt et al., 2011) and findings on the efficacy of the intervention from a randomized clinical trial (Wyatt et al., 2004), and so we provide only a brief summary here. The intervention materials are also available online (www.healingourwomen.com). In April 2015, HOW was added to the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-based Programs and Practices.

HOW seeks to build participants' skills and self-efficacy for risk-reduction behaviors in five areas (HIV-related sexual risk behavior, HIV-related drug risk behavior, HIV treatment adherence, interpersonal behaviors, and psychological functioning) by addressing body awareness, sexual socialization, sexual health behaviors, and consequences of trauma (Chin et al., 2004). Core elements focus on disclosing experiences of violence, emotional and cognitive processing of trauma, coping and resilience, and cultural, gender, and spiritual beliefs (Wyatt et al., 2011). Participants in this group intervention meet for 2 hours a week for 11 weeks. Groups are led by trained co-facilitators. Curriculum components include journal writing in which the participants write narratives of their abuse experiences; practicing techniques for relaxation, affect regulation, problem-solving, and assertive communication (e.g., with sexual partners or medical providers); and enhancement of social support networks.

Efficacy of the HOW intervention was tested in an ethnically diverse sample of HIV-positive women recruited from county and community-based clinics, county hospitals, ethnic- and AIDS-specific organizations, and drug rehabilitation centers in Los Angeles (Wyatt et al., 2004). Compared to a wait-listed control group at the end of the 11-week intervention, intervention participants reported greater condom use. Although medication adherence was not significantly better in the intervention group compared to the control group, participants who had attended at least eight intervention sessions reported significantly better medication adherence than participants who attended fewer sessions.

PSB staff have been facilitating HOW for women of color since being trained by Dr. Gail Wyatt in 2009. HOW was implemented and evaluated for fidelity and outcomes over four years. Internal evaluation found that fidelity to the intervention curriculum was generally high and that there were significant improvements in targeted health outcomes among participants from pre- to post-intervention.

PREPARATION, INTERVENTION PILOT, AND IMPLEMENTATION

Following intervention *selection*, PSB took several *preparation* steps. The assessment process identified gaps in PSB's capacity to provide services to transgender women. To build such capacity, PSB partnered with Community Kinship Life (CK Life), whose mission is to provide the transgender community with the tools needed to achieve their personal goals while having a sense of community and kinship. CK Life is based in the South Bronx and offers medical services as well as assistance with enrolling in health insurance programs, counseling, surgery assistance and education, name and gender marker change assistance, support groups, mentoring, and safer sex education. Kim Watson (CK Life founder) provided technical assistance on transgender health issues and stakeholder input throughout the intervention adaptation and implementation process, as well as group facilitation.

A team consisting of PSB HIV prevention staff, the CK Life consultant, PPNYC researchers, and Dr. Wyatt, worked closely to *prepare, pilot,* and *implement* HOW for transgender women (HOW-TW). Additional preparation steps included applying for and securing funding to adapt and test HOW-TW, and providing a 40-hour

training for those individuals who would serve as intervention facilitators. We also conducted a pretest of the HOW intervention in its original curriculum format with our first group of transgender women participants. Our intention was to maintain fidelity to the original HOW core elements and curriculum manual, while making only those content adaptations necessary to increase the relevance and cultural appropriateness of the content for transgender women. The adaptation team met after each intervention session to discuss what worked and what needed to be revised and how. The *Primary Care Protocol for Transgender Patient Care* produced by the Center of Excellence for Transgender Health at the University of California, San Francisco (2011) was used by the team as a source for adding medically accurate health content to the HOW curriculum for transgender women.

As we moved on to the *pilot* action step, all suggested adaptations were pilot tested with a second group of participants. Again, the adaptation team met after each weekly session to discuss the success of the adapted content and whether any further changes were needed. We finally completed the *implement* action step by using the finalized HOW-TW curriculum manual with a third group of participants. Process evaluation and quality assurance procedures were built into each action step. Each of three intervention groups completed 11 weekly sessions at 2 hours per session.

EVALUATION QUESTIONS AND ANALYSES

Evaluation questions, specific to the MAP action steps, guided our research: (1) What changes to the original content of HOW are needed to specifically address HIV risk reduction for transgender women? (*Prepare* step); (2) Can the revised curriculum be implemented with fidelity (i.e., delivered to participants as outlined by the intervention developers in the program manual; Melde, Esbensen, & Tusinski, 2006)? (*Pilot* and *Implement* steps); (3) Is the HOW-TW intervention acceptable to transgender women of color? (*Pilot* and *Implement* steps); and (4) What are the estimates of effect sizes for changes in HOW-TW participants' reports of HIV knowledge, well-being, and risk behaviors before and after the intervention? (*Implement* step).

To answer question 1, we described adaptations made to the HOW curriculum content. To answer question 2, we conducted descriptive analyses of content fidelity and facilitation quality evaluations completed at each HOW-TW session using standardized, quantitative rating tools. To answer question 3, we assessed our ability to recruit, enroll, and retain women in the intervention as well as their attendance, engagement in group discussions, and feedback about the intervention. For question 4, due to the small sample size and pilot nature of the study, we estimated effect sizes of changes in self-reported levels of HIV knowledge, depressive symptoms, coping skills, condom use self-efficacy, and condom use. *T*-test analyses were conducted to analyze differences between individually matched baseline and postintervention variables. Given the primary focus of the study on adaptation and acceptability of the intervention for a new population, the sample size was not statistically powered to assess health outcomes with generalizable probability. However, we provide preliminary analyses to assess effect sizes for the health outcomes, which may help to power a future larger study.

METHODS

RECRUITMENT AND SCREENING

A CK Life staff member who was familiar with the study eligibility criteria verbally recruited all transgender women for the study through personal and professional associations. Recruitment began one month prior to the first session of each HOW-TW cycle. No one approached about participation declined to be subsequently screened by research staff for eligibility. Research staff conducted eligibility screening within one week of the first session. Inclusion criteria were: self-identification as a transgender woman of color (race/ethnicity other than non-Hispanic white), verbal comprehension of English, known HIV status by means of a recent HIV test, history of sexual victimization as an adult or child, no mental health or drug overdose hospitalizations in the past 30 days, and no current suicidal ideation or symptoms of psychosis. Participants provided informed consent to participate in research as part of the intervention process. Institutional Review Board approval for the use of human subjects was obtained for all phases this study (i.e., all three groups for observational and survey data). Food was provided during the groups, and participants received $20 in grocery store gift cards at the end of each session, as well as a $5 Metrocard for round-trip subway fare. Participants also received a $25 gift card upon graduation from the program.

MEASURES AND DATA COLLECTION

Acceptability. Participant attendance and drop-out were tracked as indicators of program acceptability. Attendance was recorded at each session. A HOW-TW facilitator checked in with each participant by phone between weekly sessions, and discussed reasons for absences with anyone who had missed the previous session; these check-ins included discussions of any stress experienced in relation to group participation. Satisfaction was assessed through qualitative data collected by observers during group discussions, and especially during the last two group sessions where participants were processing closure and their reactions to the intervention.

Fidelity and Facilitator Performance. All sessions of HOW-TW were observed by a research staff member who completed checklists to document performance of curriculum content and quality of facilitation skills. Observers had graduate-level training in social work or public health and prior experience evaluating manualized HIV prevention interventions. The curriculum content checklists for each program session provided space for the observer to document the completion of activities in accordance with the curriculum manual, any problems identified, and corrective action plans. To calculate a fidelity statistic, we divided the number of program activities completed successfully by the total number of program activities. At each session, observers also rated facilitator performance of 21 skills in five areas: group inclusion, effective listening, encouraging dialogue, remaining nonjudgmental, and co-facilitation. These skills were operationalized on the instrument, which was used to rate each as *excellent, satisfactory*, or *needs improvement*.

Health-Related Outcomes. To pilot test potential changes in HIV risk behaviors and co-factors, quantitative surveys were administered as individual interviews by

a research staff member at baseline (one week prior to first program session) and after the completion of the last session in week 11. *HIV knowledge* was measured with 11 true/false questions (New York State Department of Health AIDS Institute, 2010). An overall knowledge score was calculated for each participant based on her percentage of correct answers. Participants indicated how frequently they experienced eight *depressive symptoms* (e.g., feeling sad, having restless sleep) over the past 30 days using a 4-point scale (1 = *rarely or never*, 4 = *all the time*). These items were selected from the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977) and adaptations were made to the response options and look-back period. Participants answered 12 questions about their use of problem-focused, emotional processing, emotional expressive, and alcohol-drug disengagement *coping* strategies in the past 30 days, using a 4-point response scale (1 = *rarely or never*, 4 = *all the time*; adapted from Stanton, Kirk, Cameron, & Danoff-Burg, 2000). *Condom use self-efficacy* was measured with nine questions about perceived ability to use condoms and engage in other sexual risk-reduction practices with a partner. The questions, drawn from PSB's risk assessment tool, used a 4-point response scale (1 = *strongly disagree*, 4 = *strongly agree*). Participants who were not currently sexually active were instructed to answer these questions imagining that they were. *Condom use behavior* was measured with those participants who reported any sexual partners. Participants were asked to report the number of times that they engaged in vaginal, oral, or anal sex over the past 30 days, and to report how many times condoms had been used from start to finish during each sexual act. The total number of times a condom was used for all sexual acts was divided by the total number of sexual acts to determine the percent of time condoms were used during sexual activity (vaginal, oral, or anal sex).

RESULTS

PARTICIPANT CHARACTERISTICS

We recruited and screened 22 transgender women, 21 of whom were enrolled in the HOW intervention (6, 7, and 8 per group) and consented to participate in research. Table 1 presents demographic characteristics of the sample.

ACCEPTABILITY

We calculated a session attendance rate by dividing the total number of sessions into the number of sessions attended. Session attendance ranged from 64% to 100%, with a mean of 84%. Most program graduates missed one (28.6%) or two (23.8%) sessions.

Seventeen participants were retained in the program until graduation. The first cycle had the highest number of drop-outs at three, while the second and third cycles had one woman each drop out prior to graduation. Drop-out seemed more related to the fit between HOW-TW's session schedule and the participants' daily schedules than to dissatisfaction or discomfort with the program content. In cycle 1, two women who came to the program orientation and were enrolled did not return to attend any of the sessions; one was experiencing serious health problems that prevented her from engaging with the program, while the other was experiencing housing problems. One of these participants re-enrolled into cycle 2, but dropped out after attending the first two sessions. A third participant from cycle 1 died between sessions 9 and 10; the cause of her death was unrelated to the program (and until

TABLE 1. HOW-TW Baseline Participant Characteristics

Characteristic	*M* ± *SD* or *n* (%)
Age in years	37.95 ± 9.12
Race/ethnicity	
Black/African American (Non-Hispanic)	11 (52.4)
Latina/Hispanic	5 (23.8)
Other race/ethnicity (e.g., biracial)	5 (23.8)
Educational attainment	
Less than high school	3 (14.3)
High school graduate/GED	18 (85.7)
Housing status	
Permanent housing	19 (90.5)
Transitional housing	2 (9.6)
Employment status	
Working full-time	1 (4.8)
Working part-time	9 (42.9)
Unemployed	11 (52.4)
Experience of sexual violence/abuse	
Childhood only	5 (23.8)
Adulthood only	2 (9.5)
Both childhood and adulthood	14 (66.7)

Note. *M* = mean; *SD* = standard deviation.

her death she had been a steady presence in the group, missing only one session). Finally, the one participant who did not complete cycle 3 was asked not to return after session 7 due to excessive absences and her inability to commit to attending the remaining sessions.

Participant satisfaction was consistently high among members across the three groups. One criticism was offered by a participant who was otherwise highly satisfied with the program: "I didn't like the fact the topics that were brought up, we didn't have enough time to fully discuss." During fidelity observations, it was also noted that group members were engaged in discussion, often wanting more time at the end of each session to continue talking. Members who were less talkative were successfully encouraged by facilitators and other members to participate. As the program concluded, participants said they would miss the sisterhood and opportunity for weekly social contact and support provided by the group, as well as the venue for sharing and education. They spoke about continuing to use the problem-solving method they learned, journaling to process their thoughts, and working toward the health goals they set at the beginning of the program even after the group's end. While one participant remained frustrated that she could not fully process incomplete memories of childhood abuse, others discussed how the program had been helpful in changing their thinking about sexual risk or substance use.

CURRICULUM ADAPTATIONS, FIDELITY, AND FACILITATOR PERFORMANCE

An overview of the 11 HOW sessions and adaptations made for use with transgender women is provided in the appendix. Core elements of the program—"required elements that embody the theory and internal logic of the intervention

TABLE 2. Paired Samples *t*-Tests of Health Variables

Outcome	Mean (*SD*)		Mean Difference	*p*
	Baseline	Post		
HIV knowledge	79.14 (21.98)	83.96 (9.92)	4.82	.31
Depressive symptoms	2.43 (.62)	2.04 (.50)	.39	.05
Coping	2.75 (.77)	3.08 (.54)	.33	.05
Condom use self-efficacy	3.18 (.56)	3.35 (.67)	.17	.14
Condom use	47.40 (34.41)	53.89 (34.08)	6.49	.62

Note. $N = 17$ for all analyses except $N = 9$ for condom use because this was the number of women who were sexually active at both time points. HIV knowledge and condom use were measured as percentages. Depressive symptoms, coping, and condom use self-efficacy were measured on 4-point scales; higher scores indicate more depressive symptoms, more positive coping, and greater condom use self-efficacy.

and most likely produce the intervention's main effects" (McKleroy et al., 2006, p. 62)—were not changed. The adaptation team made as few adaptations as possible to the original curriculum, and content for some sessions required no adaptation. Despite variations in the curriculum that was used in each cycle as a result of the adaptation process, the total number of program activities remained the same across all three cycles. To affirm the participants' identities as women, most language related to sex and gender was left as it was in the original curriculum, except where content specific to transgender women (e.g., gender confirmation surgical techniques in discussion of sexual/reproductive anatomy) was discussed.

Analysis of the curriculum content checklists indicated that facilitator fidelity to the curriculum was high, with 91.1% of key program activities having been delivered across the 33 total program sessions (11 per cycle). When program activities were not covered, it was usually due to a late session start or because other exercises in the session exceeded the planned time. Evaluation of facilitator performance showed that facilitator skills were rated as satisfactory or excellent on 90.3% of occasions over the three cycles.

HEALTH OUTCOMES

Table 2 presents descriptive statistics and *t*-test results for matched samples pre- and postintervention on reports of HIV knowledge, depressive symptoms, coping, condom use self-efficacy, and condom use. The largest changes were decreases in depressive symptoms and increases in coping from pre- to postintervention, which achieved statistical significance even in this small sample. Nine of the 17 participants reported being sexually active in the previous 30 days at both pre- and postsurvey. Condom use increased by 6.5% of sexual encounters and knowledge increased by about 4.8%, which were not significant. Four participants reported no sexual activity at either time point, one participant was sexually active at baseline but not at postintervention, and three participants were sexually active at postintervention but not at baseline. Condom use self-efficacy showed the smallest change.

DISCUSSION

This study about adapting and pilot testing Healing Our Women with transgender women of color in New York City represents an important addition to the literature on HIV preventive interventions. Assessment of the need for such an intervention among transgender women in the Bronx, NY, as well as PSB's organizational capac-

ity to deliver it, informed the adaptation and implementation process. Overall, we found that implementation of HOW-TW was feasible and acceptable in our programmatic setting. While it was necessary to revise some HOW curriculum content for cultural appropriateness (as described in the appendix), most of the exercises and content could be used without adaptation. HOW was originally developed to address the role of trauma in HIV prevention and treatment, and this remained the primary focus. For example, original curriculum content defined sexual and physical violence as abuses of power and control and concepts such as coercion and consent, while also allowing group participants to relate their own individual experiences and contexts. As such, we did not need to adapt this content; transgender women were able to share their own memories and understandings of victimization as other women have done in HOW.

The adapted intervention was found to be acceptable to transgender women of color: we were able to meet recruitment targets for each cycle, attendance was good, and retention in the program was high with nearly four out of every five enrolled participants receiving graduation certificates. Participants' satisfaction with the program was also high. The facilitators were able to deliver the curriculum content with a high degree of fidelity to the curriculum and generally demonstrated a high level of competency in facilitating the sessions.

Although a full outcome study was not possible due to the pilot nature of this intervention and small number of participants, we conducted exploratory analyses of the differences between pre- and postintervention measures to examine effect sizes and preliminary evidence of program impact on health outcomes over time. These analyses yielded some promising findings. Changes in HIV knowledge, condom use self-efficacy, and condom use were in the expected direction—all were higher on average postintervention—but were not statistically significant. However, we observed significantly lower levels of depressive symptoms and higher levels of positive coping among participants at postintervention as compared to pre-intervention. Although HOW was originally designed with a focus on HIV risk reduction, it has a strong emphasis on mental wellness and coping skills. Initial studies of HOW implementation found a greater reduction in posttraumatic stress symptoms among intervention participants compared to a control group (SAMHSA, 2015). Positive changes in mental health domains are important indicators of program success and may support other positive changes related to HIV protective behaviors; future studies with larger samples and longer follow-up with participants might examine how depression and coping skills moderate or mediate HIV protective behaviors.

LIMITATIONS

We implemented HOW-TW in a context where there was a great deal of experience with providing HIV supportive services, including group-level interventions, and many years of experience with implementing HOW. Additionally, we were able to implement HOW-TW with the co-facilitation of an expert in the transgender community. Our findings may not generalize to service settings without ancillary services such as support groups specific to the gender transition process, as well as physical and mental health care. HIV testing and myriad other services were available to, and utilized by, our group participants. HOW groups in other geographic locations may not have such ancillary services available, which may impact participation in HOW. This was also a pilot study with a small number of participants, recruited using convenience sampling methods, and no control group. Further, the pilot nature of the study focused on transgender women of color in New York City, whose experiences

may be unique compared to those of transgender women in other U.S. regions. Due to the small number of participants, we analyzed data from participants in all three group cycles together, although there were variations in the curriculum used for each group as a result of the adaptation process. Assessing health outcomes with pre- and posttest measures only among intervention participants prevents us from accounting for the influence of outside events or natural changes over time that may have produced these results. Rigorously designed studies of HOW-TW are needed before the efficacy of the program can be determined. Consistent with the CDC guidance for intervention adaptations, we recommend that efficacy studies of HOW-TW implementation include process evaluation and quality assurance measures as was done in the current study (McKleroy et al., 2006).

CONCLUSIONS AND RECOMMENDATIONS

To our knowledge, HOW is the only group-level intervention with a focus on the influence of sexual trauma on the maintenance of HIV risk behaviors that has been adapted for transgender women. We believe there was significant value in offering this adapted intervention in groups specifically for transgender women. Doing so allowed topics such as HIV/STI transmission, sexual and reproductive anatomy, body image, and communication with health care providers to be addressed in a more culturally appropriate manner and provided structure for peer support. We believe several additional factors were important to the success of our initial implementation of this program, such as the accessibility of the meeting location and the provision of healthy meals, transportation reimbursement, and gift card incentives to support engagement. It is worth noting the time and financial (e.g., materials, incentives) costs associated with an 11-session intervention. Organizations should consider the resources necessary to provide HOW with fidelity. Due to the in-depth focus on trauma and cognitive-behavioral skills building, fewer sessions may not be productive.

Just as in past HOW groups, psychological distress may surface that requires additional, individualized risk assessment and treatment. Therefore, psychological counseling must be available to transgender women as they participate in the intervention, either at the host organization or via a trusted referral source. We believe that this support structure is necessary both to retain participants and assure the quality of HOW-TW implementation. Throughout the intervention, participants were provided with referrals and supportive services as necessary. Crisis counseling and HIV prevention services were available directly from PSB, and community-based referrals were made for other medical and/or psychological services from trusted trans-serving organizations. It is also important that the host organization and HOW-TW group facilitators be able to maintain focus on the specific HOW intervention content and not let the group become diverted by concerns related narrowly to the gender-transition physiological and/or psychological processes. Group participants who wish to discuss transgender-specific health issues with peers or professionals in more depth may need referrals for ancillary services.

Our initial experience adapting and implementing HOW-TW also offers several general lessons that could be applied when using this curriculum in the future, or adapting or implementing other HIV risk-reduction interventions for transgender women of color. For example, to increase cultural competency and establish trust between the host organization and the intervention participants, transgender women must play an important and visible role in delivering the intervention, including in recruitment and group facilitation. Host organizations and group facilitators that

offer HOW-TW should also be attentive to how the recruitment of participants from a relatively small, closely networked community may affect group dynamics. Pre-existing relationships among the group participants can facilitate HOW-TW participation, while making the development of trust among group members more complicated. As a general practice when implementing any group-level intervention developed before the era of Web-based social networking, we recommend setting group rules or expectations about the safe use of social media and other technologies among participants, discussing implications of social media use for the preservation of group confidentiality, and specific to HOW-TW, reviewing general principles of Internet and computer safety for those in abusive relationships and how emotional processing through writing differs from sharing with one's social network.

There is an urgent need to address the burdens of HIV and sexual violence on transgender women of color. Group-level interventions, especially those based in theory and targeted to specific populations, as HOW-TW is, are important HIV prevention tools. We hope the findings of this study can inform future efforts to promote health and wellness among transgender women.

APPENDIX: Overview of Key Adaptations for HOW-TW

Session	Curriculum Adaptations for Transgender Women
1. Orientation and Welcome	In the project background description, a general statement about HIV/AIDS among nontransgender women was replaced with statistics about HIV among transgender women.
2. Identifying Personal Behaviors and their Consequences	None
3. Identifying Behaviors and Consequences: The Social Context	Content on breast health was amended to include information about the effect of hormone therapy on breast development, considerations for women with breast implants, and mammogram guidelines for transgender women. Content on HIV/STIs (e.g., how STD symptoms manifest in males and females) and screening procedures (e.g., rectal exams, anal Pap smears) was adapted to apply to male and female physiology. Content about HIV in pregnancy and menopause, and about how HIV affects menstrual cycles, was removed.
4. Women's Bodies: Personal Identification of Barriers to Self-Knowledge	Content was added about oral and anal sex for a discussion about sexual risk behaviors in addition to vaginal sex. Pregnancy content was removed. Content on reproductive anatomy was amended to include diagrams and descriptions of male anatomy and address the impact of gender confirmation surgery on genital structures (e.g., need for lubrication during sex and continuing need for prostate exams following vaginoplasty). Content on genital hygiene was modified to include male and female physiology.
5. Triggers to Risks and How We Cope	None
6. Communication, Alternatives for Coping, and Using Social Networks	Content on breast health was revised as described under Session 3.
7. How Do We Link What We Know and What We Feel to What We Do?	In the risk-matching game, some examples were modified to apply to male- and female-bodied persons (e.g., vaginal and rectal exams for cancer risk reduction).
8. Negative Self-talk, Illness, Death, and Dying	None
9. Health Maintenance, Self-touch, and Body Awareness	For a discussion about self-care, references to menopause and GYN exams were replaced by references to hormone therapy. Content on breast health was revised as per Session 3. Content on transgender hormone therapy replaced content on menopause. Content on anal Pap test replaced cervical Paps. For a role-play about communication with health care providers, the menopause inventory was replaced with a hormonal change inventory.
10. Implementing Health Practices and Developing a Plan, Revisiting Goals, Maintenance, and Termination	None
11. Termination and Graduation	None

REFERENCES

Bockting, W. O., Robinson, B. E., Forberg, J., & Scheltema, K. (2005). Evaluation of a sexual health approach to reducing HIV/STD risk in the transgender community. *AIDS Care*, *17*, 289–303.

Center of Excellence for Transgender Health. (2011). *Primary Care Protocol for Transgender Patient Care*. Retrieved from http://transhealth.ucsf.edu/trans?page=protocol-terminology

Chin, D., Wyatt, G. E., Carmona, J. V., Loeb, T. B., & Myers, H. F. (2004). Child sexual abuse and HIV: An integrative risk-reduction approach. In L. J. Koenig, L. S. Doll, A. O'Leary & W. Pequegnat (Eds.), *From child sexual abuse to adult sexual risk: Trauma, revictimization, and intervention* (pp. 233–250). Washington, DC: American Psychological Association.

Dunkle, K. L., & Decker, M. R. (2013). Gender-based violence and HIV: Reviewing the evidence for links and causal pathways in the general population and high-risk groups. *American Journal of Reproductive Immunology*, *69*, 20–26.

Garofalo, R., Deleon, J., Osmer, E., Doll, M., & Harper, G. W. (2006). Overlooked, misunderstood and at-risk: Exploring the lives and HIV risk of ethnic minority male-to-female transgender youth. *Journal of Adolescent Health*, *38*, 230–236.

Gutierrez-Mock, L., Thomas-Guess, Y., Sevelius, J., Keatley, J., Cotten, P., & Kegeles, S. (2009). *T-SISTA: A resource guide for adapting SISTA for transwomen of color.* University of California, San Francisco, CA: The Transitions Project.

Herbst, J. H., Jacobs, E. D., Finlayson, T. J., McKleroy, V. S., Neumann, M. S., & Crepaz, N. (2008). Estimating HIV prevalence and risk behaviors of transgender persons in the United States: A systematic review. *AIDS and Behavior*, *12*, 1–17.

Institute of Medicine. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding.* Washington, DC: National Academies Press.

Li, Y., Marshall, C. M., Rees, H. C., Nunez, A., Ezeanolue, E. E., & Ehiri, J. E. (2014). Intimate partner violence and HIV infection among women: A systematic review and meta-analysis. *Journal of the International AIDS Society*, *17*, 18845.

McKleroy, V. S., Galbraith, J. S., Cummings, B., Jones, P., Harshbarger, C., Collins, C., . . . Carey, J. W. (2006). Adapting evidence-based behavioral interventions for new settings and target populations. *AIDS Education & Prevention*, *18*, 59–73.

Melde, C., Esbensen, F., & Tusinski, K. (2006). Addressing program fidelity using onsite observations and program provider descriptions of program delivery. *Evaluation Review*, *30*, 714–740.

Mimiaga, M. J., Noonan, E., Donnell, D., Safren, S. A., Koenen, K. C., Gortmaker, S., . . . Mayer, K. H. (2009). Childhood sexual abuse is highly associated with HIV risk-taking behavior and infection among MSM in the EXPLORE Study. *Journal of Acquired Immune Deficiency Syndromes*, *51*, 340–348.

Nemoto, T. P., Bödeker, B. M., & Iwamoto, M.M.A. (2011). Social support, exposure to violence and transphobia, and correlates of depression among male-to-female transgender women with a history of sex work. *American Journal of Public Health*, *101*, 1980–1988.

Nemoto, T., Operario, D., Keatley, J., Nguyen, H., & Sugano, E. (2005). Promoting health for transgender women: Transgender Resources and Neighborhood Space (TRANS) program in San Francisco. *American Journal of Public Health*, *95*, 382–384.

New York State Department of Health AIDS Institute. (2010). *HIV Prevention Outcome Monitoring Survey*. Albany, NY: Author

Nuttbrock, L., Hwahng, S., Bockting, W., Rosenblum, A., Mason, M., Macri, M., & Becker, J. (2009). Lifetime risk factors for HIV/sexually transmitted infections among male-to-female transgender persons. *Journal of Acquired Immune Deficiency Syndromes*, *52*, 417–421.

Operario, D., & Nemoto, T. (2010). HIV in transgender communities: Syndemic dynamics and a need for multicomponent interventions. *Journal of Acquired Immune Deficiency Syndromes*, *55*, S91.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.

Reback, C. J., Shoptaw, S., & Downing, M. J. (2012). Prevention case management improves socioeconomic standing and reduces symptoms of psychological and emotional distress among transgender women. *AIDS Care*, *24*, 1136–1144.

Roberts, A. L., Rosario, M., Corliss, H. L., Koenen, K. C., & Austin, S. B. (2012). Childhood gender nonconformity: A risk indicator for childhood abuse and posttraumatic stress in youth. *Pediatrics*, *129*, 410–417.

Shrestha, R. K., Sansom, S. L., Schulden, J. D., Song, B. W., Smith, L. C., Ramirez, R., . . . Heffelfinger, J. D. (2011). Costs and effectiveness of finding new HIV diagnoses by using rapid testing in transgender communities. *AIDS Education & Prevention*, *23*, 49–57.

Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology*, *78*, 1150–1169.

Stotzer, R. L. (2009). Violence against transgender people: A review of United States data. *Aggression and Violent Behavior*, *14*, 170–179.

Substance Abuse and Mental Health Services Administration, National Registry of Evidence-based Programs and Practices. (2015). *Healing Our Women* (HOW). Retrieved from http://nrepp.samhsa.gov/ViewIntervention.aspx?id=359

Taylor, R. D., Bimbi, D. S., Joseph, H. A., Margolis, A. D., & Parsons, J. T. (2011). Girlfriends: Evaluation of an HIV-risk reduction intervention for adult transgender women. *AIDS Education & Prevention*, *23*, 469–478.

Wei, C. Y., Herrick, A., Raymond, H. F., Anglemyer, A., Gerbase, A., & Noar, S. M. (2011). Social marketing interventions to increase HIV/STI testing uptake among men who have sex with men and male-to-female transgender women. *Cochrane Database of Systematic Reviews, 2011*. doi:10.1002/14651858. CD009337.

Wyatt, G. E., Hamilton, A. B., Myers, H. F., Ullman, J. B., Chin, D., Sumner, L. A., . . . Liu, H. (2011). Violence prevention among HIV-positive women with histories of violence: Healing women in their communities. *Women's Health Issues*, *21*, S255–S260.

Wyatt, G., Longshore, D., Chin, D., Carmona, J., Loeb, T., Myers, H., . . . Rivkin, I. (2004). The efficacy of an integrated risk reduction intervention for HIV-positive women with child sexual abuse histories. *AIDS and Behavior*, *8*, 453–462.

Wyatt, G. E., Myers, H. F., Williams, J. K., Kitchen, C. R., Loeb, T., Carmona, J. V., . . . Presley, N. (2002). Does a history of trauma contribute to HIV risk for women of color? Implications for prevention and policy. *American Journal of Public Health*, *92*, 660–665.

Xavier, J. M., Bobbin, M., Singer, B., & Budd, E. (2005). A needs assessment of transgendered people of color living in Washington, DC. *International Journal of Transgenderism*, *8*, 31–47.