Results of a Pilot Study to Ameliorate Psychological and Behavioral Outcomes of Minority Stress among Young Gay and Bisexual Men

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Abstract

Project PRIDE (Promoting Resilience In Discriminatory Environments) is an eight-session small group intervention aimed at reducing negative mental and behavioral health outcomes resulting from minority stress. This study reports the results of a one-armed pilot test of Project PRIDE, which aimed to examine the feasibility and potential for efficacy of the intervention in a sample of 33 gay and bisexual men aged 18 to 25. The intervention appeared feasible to administer in two different sites and all participants who completed post-treatment (n = 22) or follow-up (n = 19) assessments reported high satisfaction with the intervention. Small to large effect sizes were observed for increases in self-esteem; small effect sizes were found for decreases in loneliness and decreases in minority stress variables; and small and medium effect sizes were found for reductions in alcohol use and number of sex partners, respectively. Overall, Project PRIDE appears to be a feasible intervention with promise of efficacy.

Keywords: Gay and bisexual men, youth, behavioral intervention, counseling, pilot trial, minority stress, mental health

Results of a Pilot Study to Reduce Psychological and Behavioral Outcomes of Minority Stress among Young Gay and Bisexual Men

Research suggests that, on average, gay and bisexual men (GBM) experience a number of health disparities, including higher average rates of negative mental health outcomes compared to men identifying as heterosexual (e.g., Cochran, Sullivan, & Mays, 2003). Relatively little research has examined the trajectory of mental health from adolescence to young adulthood for GBM, despite evidence that these disparities in young adulthood may originally emerge in adolescence (Marshal et al., 2013). Young GBM report higher levels of mental health concerns than their heterosexual counterparts, such as depression and suicidality (e.g., Burton, Marshal, Chisolm, Sucato, & Friedman, 2013; Marshal et al., 2013; Mustanski, 2015). There is also evidence of greater risk of substance use among sexual minorities (e.g., King et al., 2008). The overall trend of poorer mental and behavioral health outcomes in young GBM warrants further examination.

Theoretical Understanding of GB Men's Health Disparities

These disparities can be partially explained by sexual minority youth's experiences of stigmatization, victimization, and social rejection and isolation (Burton et al., 2013). As sexual orientation awareness typically occurs between the ages of 8 to 10 years (Maguen, Floyd, Bakeman, & Armistead, 2002), many adolescent and adult GBM are forced to either conceal their identities out of fear of violence, shame, or rejection, or disclose their identities and potentially face familial, peer, and societal stressors pertaining to their sexual minority status (e.g., Ryan, Huebner, Diaz, & Sanchez, 2009). In addition, sexual minority groups experience greater social isolation, as evidenced by higher loneliness scores among lesbian, gay, and bisexual (LGB) individuals compared to heterosexuals (Doyle & Molix, 2016), including LGB

undergraduate students (Westefeld, Maples, Buford, & Taylor, 2001) and LGB youth (Hegna & Rossow, 2007).

The mental and behavioral health disparities that exist between heterosexual and sexual minority communities have been conceptualized through the Minority Stress Model (Meyer, 1995, 2003). This model focuses on the added stress experienced by individuals belonging to a socially stigmatized group (Meyer, 2003). As well as stress resulting from actual experiences of discrimination, the constant threat of hostility and expectation of adverse events leads to high levels of distress (Meyer, 1995). Internalized stigma, which by definition impedes self-acceptance, and concealment of one's minority identity for fear of not being accepted by others are also features of minority stress (Meyer, 2003). The Minority Stress Model (Meyer, 2003) posits that the additive effects of prejudice, internalized stigma, and concealment contribute to the poorer health outcomes that are found among GBM.

Research on the link between minority stress and mental health outcomes is expansive. Specifically, experiences of heterosexist discrimination and internalized homonegativity are associated with greater psychological distress, including depression, anxiety, and loneliness (Baams, Grossman, & Russell, 2015; Eldahan et al., 2016; Meyer, 2003; Rendina et al., 2016; Schwartz, Stratton, & Hart, 2016). In addition, discrimination and internalized homonegativity are associated with greater alcohol use frequency among GBM (Brubaker, Garrett, & Dew, 2009; Green & Feinstein, 2012). Sexual orientation discrimination and expectations of discrimination are also positively associated with loneliness among older LGB adults (Kuyper & Fokkema, 2010). Furthermore, there is evidence that LGB youth struggle with self-esteem (e.g., Craig, McInroy, Austin, Smith, & Engle, 2012), which is likely attributable to minority stress (Hatzenbuehler, 2009).

In addition to its impact on depression, anxiety, loneliness, and self-esteem, minority stress has been linked to poorer sexual health outcomes (e.g., Hatzenbuehler, Nolen-Hoeksema, & Erickson, 2008; Rendina et al., 2016). For example, young GBM with high levels of internalized homonegativity were 8.7 times more likely to engage in risky sexual behaviors (e.g., condomless receptive anal sex with multiple partners) compared to participants low in internalized homonegativity (Meyer & Dean, 1998). Hatzenbuehler et al. (2008) found a significant association between internalized homonegativity and both the number of times a participant engaged in condomless anal sex and the number of partners. It should be noted, however, that a meta-analysis of studies examining the association between internalized homonegativity and sexual risk behaviors found only a small effect (Newcomb & Mustanski, 2011).

In addition to internalized homonegativity, GBM youth experience multiple minority stressors, which may result in limited social support and increased isolation from their interpersonal networks (e.g., family, non-GBM peers), particularly among ethnic minority young GBM (Frost, Meyer, & Schwartz, 2016). As a result, they may engage in various maladaptive coping strategies to cope with minority stressors and social isolation (e.g., substance use and sexual partner seeking; Hatzenbuehler et al., 2008; Hubach, DiStephano, & Wood, 2012). These maladaptive coping strategies increase the likelihood of engaging in HIV risk behaviors (e.g., condomless anal sex, sharing needles), even among young GBM reporting a thorough understanding of HIV transmission and infection (Hubach et al., 2012). Minority stress may therefore also impact sexual behavior indirectly through the use of coping strategies that increase risk of negative sexual health outcomes.

Interventions for Young GB Men

Despite mounting evidence that minority stress is linked with diminished mental and sexual health in young GBM, there is a limited number of psychosocial interventions for this population beyond HIV prevention programs **(**e.g., Craig, Austin, & Alessi, 2013**)**. Presently, there exists only one evidence-based, efficacious cognitive-behavioral therapy (CBT) protocol targeting young adult GBM: Effective Skills to Empower Effective Men (ESTEEM; Pachankis, 2014; Pachankis, Hatzenbuehler, Rendina, Safren, & Parsons, 2015). In a randomized controlled trial, significant changes were found in problematic alcohol use, depressive symptoms, sexual compulsivity, condom use self-efficacy, and condomless anal sex, but reductions were not found in cognitive, affective, or behavioral minority stress variables compared to the waitlist group (Pachankis et al., 2015). This ten-session, manualized individual therapy was adapted from the unified CBT protocol for treatment of psychological disorders (Barlow et al., 2010) and administered by CBT-trained clinicians (e.g., senior doctoral students in clinical psychology). The use of advanced CBT techniques, such as cognitive restructuring and situational exposures (Pachankis et al., 2015), while effective, may limit its ability to be successfully implemented in community-based organizations such as LGBT youth centers or other health settings lacking trained CBT clinicians. Further, group-based interventions allow more individuals to receive treatment concurrently in resource-limited settings.

In addition to ESTEEM, a number of other interventions have been developed to address mental and behavioral health in GB men and adolescents, though they do not directly address minority stress. First, Rainbow SPARX (Lucassen, Merry, Hatcher, & Frampton, 2015) is a computerized, individual CBT intervention targeting depression in adolescent GBM aged 13-19. A small one-armed pilot of Rainbow SPARX revealed significant decreases in depression from pre- to post-treatment. This promising intervention adds to the existing CBT-based resources for

young GBM but was not tested with an emerging adult sample and may not be appropriate for those above age 19; moreover, it does not address minority stress. Second, Project ECHO (Coffin et al., 2014) is an individual-level intervention for HIV-negative sexual minority men grappling with episodic drug use or binge drinking. The program focuses on identifying self-justifications for engaging in risky behavior through personalized cognitive counseling. A randomized controlled trial revealed no differences in reductions in sexual risk behaviors between those in the treatment group and those in treatment-as-usual control group; however, among participants not meeting criteria for substance dependence, there was a reduction in sexual risk behavior compared to participants in the control group. While there was some evidence of efficacy, Project ECHO was not designed specifically for young GBM, and it does not address minority stress. Finally, the Young Men's Health Project (Parsons, Lelutiu-Weinberger, Botsko, & Golub, 2014) is an individual-level intervention for young HIV-negative GBM aged 18-29 that consists of four sessions of motivational interviewing. In a randomized controlled trial comparing the intervention to psychoeducation sessions, those in the intervention group had greater reductions in drug use and condomless anal sex than those in the comparison group. While its impact on sexual risk behaviors and focus on young GBM are laudable, this intervention does not explicitly address minority stress, and it is unknown whether there is an impact on mental health variables beyond substance use. Overall, there is a need for interventions that target young GB men, directly address minority stress, and can be administered by facilitators with minimal training in CBT.

The Current Study

The present study aims to test the feasibility of an intervention designed to reduce the negative effects of minority stress on both mental health (e.g., anxiety, substance use) and sexual

health (e.g., number of sex partners) among young GBM aged 18-25. The intervention, Project PRIDE (Promoting Resilience In Discriminatory Environments), is a theory-based, eight-session, manualized small group intervention that focuses on providing participants with tools to effectively cope with minority stress to promote sexual health, reduce drug and alcohol use, and ameliorate negative mental health outcomes (Smith et al., 2016). This intervention was designed to be able to be administered by paraprofessional group facilitators who are not trained in advanced CBT techniques such as Socratic questioning, cognitive restructuring, or exposures, but who could potentially administer simple behavioral techniques, such as identifying personal stressors and achievable goals.

In addition to testing the feasibility of Project PRIDE, the present study aims to provide preliminary evidence of the efficacy of the intervention. As such, the following hypotheses were tested: (a) the intervention would be feasible and acceptable with high participant satisfaction and low attrition; (b) from pre-treatment to post-treatment, participants would evidence decreases in negative mental-health-related outcomes (i.e., depression, anxiety, and loneliness) and increases in self-esteem; (c) from pre-treatment to post-treatment, participants would evidence decreases in minority stressors (i.e., internalized homonegativity, sexual orientation concealment, concerns about acceptance and privacy, and difficulty accepting sexual orientation); (d) from pre-treatment to post-treatment, participants would evidence decreases in sexual risk behaviors (i.e., condomless sex and multiple partners); (e) from pre-treatment to post-treatment, participants would evidence decreases in substance use (i.e., alcohol, marijuana, cocaine/crack, tranquilizers, oral narcotics, amphetamines, sedatives/barbiturates, and injection drugs); (f) changes from pre-treatment to post-treatment would increase or remain stable both from post-treatment to follow-up (indicating further improvement or stability of change after the treatment)

and from pre-treatment to follow-up (indicating long-term improvement or stability of change from baseline); and (g) reductions in minority stress would be associated with corresponding reductions in psychological and behavioral health outcomes.

Method

Procedure

Participants were recruited through flyers posted in venues frequented by young GBM (e.g., LGB bars, cafes in LGB areas), email announcements from local community organizations, and advertisements on a popular smartphone application for social and sexual networking. Advertisements asked for participation among 18-25-year-old men identifying as gay, bisexual, same-gender-loving, queer, or a related term who were interested in learning how to cope with the stress of living in a discriminatory environment.

Research assistants assessed the eligibility of interested participants using a telephone screening protocol. Eligibility criteria included identifying as a man (both cisgender and transgender individuals who identified as men were eligible); identifying as gay, bisexual, same-gender-loving, queer, or another nonheterosexual identity; self-reported HIV-negative or unknown HIV status (because Project PRIDE was developed to serve as a primary HIV-prevention intervention); having at least one instance of condomless anal sex (insertive or receptive) in the past three months (those who had not engaged in condomless sex were excluded in order to examine if the intervention would reduce sexual risk behaviors among those already engaging in some level of risk behavior); ability to read and write in either English or French (the two official languages of Canada); and ability to attend the intervention sessions. Self-report questionnaires were completed by participants at pre-treatment, post-treatment, and 3-month follow-up. All participants who completed the post-treatment or 3-month follow-up assessment

were invited to participate in one-on-one elicitation interviews to assess their satisfaction with the intervention and study procedures and to elicit suggestions for improvement. To minimize perceived pressure to respond favorably, the interviewer was not one of the intervention facilitators.

Participants received $30 for each questionnaire, $30 for each interview, and $10 for each intervention session they attended. The study was approved by the institutional review boards of McGill University, Ryerson University, Université du Québec à Montréal, and University of Windsor. All participants provided written informed consent.

Participants

A total of 181 potential participants were screened and 58 were eligible (see Figure 1 for more details). A total of 33 participants completed the pre-treatment assessment. Ages ranged from 18 to 25, with a mean age of 21.91 (*SD* = 2.15). Sixteen participants identified as exclusively gay; three participants identified exclusively as bisexual; and one identified exclusively as same-gender-loving. The remainder endorsed multiple identities (including queer and pansexual, in addition to gay, bisexual, and same-gender-loving). A little over half the sample identified as White (*n* = 18, 54.6%), with 21.2% (*n* = 7) identifying as Black, 9.1% (*n* = 3) identifying as Asian, 6.1% (*n* = 2) identifying as Latino, and 3.0% each (*n* = 1 each) identifying as Arab/Middle Eastern, Aboriginal, and multiracial. The majority (*n* = 28, 84.8%) were single. The modal education level was some college and the majority made $20,000 or less per year. Seventeen were students. Of those who were not students, all were employed.

Measures

Demographics included self-reported age, sexual orientation, gender identity, ethnic/racial background, relationship status, occupation, education level, income, and language

spoken at home.

Depression was measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a 20-item scale measuring depressive symptoms in the past week. Items include "I thought my life had been a failure" and "I had crying spells." Responses are given on a 4-point scale, ranging from 0 (*rarely or none of the time; <1 day in the past week)* to 3 (*most or all of the time; 5-7 days in the past week*). Four items are reverse coded. Scores range from 0 to 60 and greater scores are indicative of more depressive symptoms. The CES-D had high internal consistency in two large samples of GBM (Hays, Turner, & Coates, 1992; Schwartz et al., 2016). Cronbach's alphas in the present study were .89, .86, and .89 for pre-treatment, post-treatment, and follow-up, respectively. Note that alphas were calculated using available data only, whereas some other analyses used an intent-to-treat approach (see data analysis section below).

Anxiety was measured using the state version of the State-Trait Inventory for Cognitive and Somatic Anxiety (Grös, Antony, Simms, & McCabe, 2007), a 21-item scale measuring cognitive and somatic symptoms of anxiety. Participants are instructed to respond based on how accurately each statement reflects their feeling in the present moment. Items include "I feel agonized over my problems" and "I have butterflies in my stomach" and are rated on a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*very much so*). The state version, rather than the trait version, was used so that we could detect changes in anxiety, if any, over time. Cronbach's alpha was .91 among HIV-negative GBM (Schwartz et al., 2016). Cronbach's alphas in the present study were .78, .78, and .87 for pre-treatment, post-treatment, and follow-up, respectively.

Loneliness was measured using the UCLA Loneliness Scale (Russell, 1996), a 20-item scale in which respondents rank the frequency with which each statement represents how they

feel, ranging from 1 (*never*) to 4 (*always*). A sample item is "How often do you feel that your relationships with others are not meaningful?" Cronbach's alpha were high in general samples (Russell, 1996). Cronbach's alphas in the present study were .92, .89, and .89 for pre-treatment, post-treatment, and follow-up, respectively.

Self-esteem was measured by the Rosenberg Self-esteem Scale (Rosenberg, 1965), a 10-item scale that measures feelings of self-worth. Five items are reverse coded. Respondents indicate whether they strongly agree, agree, disagree, or strongly disagree with each statement, including "I feel that I have a number of good qualities." Cronbach's alpha was .84 in a sample of GBM (Schwartz et al., 2016). Cronbach's alphas in the present study were .79, .74, and .79 for pre-treatment, post-treatment, and follow-up, respectively.

Internalized homonegativity was measured by the Nungesser Homosexuality Attitudes Inventory-Revised (NHAIR; Nungesser, 1983; Shidlo, 1994), a 36-item scale measuring negative attitudes towards one's own sexual orientation, for example "If it were made public that I am gay/bisexual, I would be extremely unhappy." Possible responses range from 1 (*never*) to 4 (*always*). Cronbach's alpha was .90 (Shidlo, 1994). Cronbach's alphas in the present study were .88, .92, and .92 for pre-treatment, post-treatment, and follow-up, respectively.

Sexual orientation concealment was measured with the Sexual Orientation Concealment Scale (Jackson & Mohr, 2016), a 6-item scale assessing effortful concealment of one's sexual orientation in the last 2 weeks. Items are scored on a 5-point scale, including anchors of 1 = *not at all*, 2 = *a little bit*, 3 = *somewhat*, 4 = *very much*, and 5 = *all the time*. A sample item is "In the last 2 weeks, I have allowed others to assume I am straight without correcting them." Items are averaged to provide a possible score between 1 and 5. Cronbach's alphas ranged from .77 to .93

(Jackson & Mohr, 2016). Cronbach's alphas in the present study were .86, .84, and .82 for pre-treatment, post-treatment, and follow-up, respectively.

Gay/bisexual identity was measured by the Lesbian, Gay, and Bisexual Identity Scale (LGBIS, Mohr & Fassinger, 2000), a 27-item scale that measures various facets of LGB identity. The LGBIS includes the following subscales: Need for Privacy (views of one's LGB identity as private and sensitive as well as concerns about one's identity being disclosed; 6 items; alphas: .85 for pre-treatment, .79 for post-treatment, and .80 for follow-up), Need for Acceptance (fears and preoccupation about others' views of one's LGB identity; 5 items; alphas: .70 for pre-treatment, .86 for post-treatment, and .74 for follow-up), Identity Confusion (uncertainty about one's sexual orientation; 4 items; alphas: .80 for pre-treatment, .89 for post-treatment, and .50 for follow-up), Difficult Process (perception that developing and embracing an LGB identity has been slow and difficult; 5 items; alphas: .73 for pre-treatment, .80 for post-treatment, and .73 for follow-up), Superiority (negative views of heterosexuals; 2 items; alphas: .40 for pre-treatment, .72 for post-treatment, and .05 for follow-up), and Internalized Homonegativity/ Binegativity (negative views of one's sexual orientation; 5 items; alphas: .81 for pre-treatment, .84 for post-treatment, and .84 for follow-up). Reported Cronbach's alphas ranged from .62 to .98 (Mohr & Fassinger, 2000). Because of the low reliability estimates for identity confusion and superiority, and because we used the NHAI-R to measure internalized homonegativity, only the need for privacy, need for acceptance, and difficult process subscales are reported in the present study.

Condomless sex and number of sex partners were assessed using a measure created by Sikkema and colleagues (Kalichman, Sikkema, DiFonzo, Austin, & Luke, 2002; Sikkema et al., 2000), in which participants are instructed to report on their sexual behavior in the past three months for four categories of partners: HIV-positive male, HIV-negative or unknown status

male, HIV-positive female, and HIV-negative or unknown status female. Participants indicated whether they engaged in vaginal, anal, or oral sex with each type of partner (yes/no) and if so, the number of partners, number of instances of vaginal or anal sex, and the number of times a condom was used for vaginal or anal sex. Condomless sex was calculated by summing the number of instances of anal or vaginal sex and subtracting the total number of instances of sex where a condom was used. Note that when data collection occurred, no pre-exposure prophylaxis (PrEP) for the prevention of HIV was approved by the federal health agency in Canada. As such, participants were not asked about their use of PrEP and it can be reasonably assumed that, because PrEP was not available, no participants were on PrEP.

Alcohol and drug use frequency was measured by a scale created by Sikkema, Kochman, DiFranceisco, Kelly, and Hoffmann (2003) that asked participants to indicate the frequency of use of eight different substances over the past month: alcohol, marijuana, cocaine/crack, tranquilizers (e.g., Xanax), oral narcotics, amphetamines, sedatives/barbiturates, and injection drugs. Responses were on a 6-point scale. Following the recommendations of Sikkema et al., we calculated a frequency for each substance, such that *no use* = 0, *once or twice* = 2 occasions, *about once a week* = 4 occasions, *several times a week* = 12 occasions, *about every day* = 30 occasions, and *more than once a day* = 45 occasions. Scores thus represent a monthly estimate of frequency of use. Given that several substances were not endorsed by any participant, we report results for alcohol, marijuana, cocaine/crack, and amphetamines only. Use of other substances was not endorsed by any participant.

Interviews

At post-treatment and again at 3-month follow up, participants completed a one-on-one exit interview to assess their satisfaction with the intervention and procedures. The interview

protocol included questions about the intervention, such as their general impressions of being in the group, what they found helpful, how interesting and pertinent they found the information, and what they would change, and perceived effects of the intervention, including how they had changed as a result of participation and whether they perceived any positive or negative effects of participation. Similar questions were asked at post-treatment and at 3-month follow-up, though the follow-up interview asked participants to think about long-term changes or effects of participation, as well as whether their view of the intervention had changed over time. Interviews were conducted by study personnel who were not intervention facilitators.

Treatment

Project PRIDE is an eight-session group intervention, which was designed in collaboration with community focus groups and advisory boards in Montreal and Toronto. The intervention is described by the authors in detail elsewhere (Smith et al., 2016). For the present study, the intervention was delivered to three groups, with two in Montreal and one in Toronto. There was no control group. Each session was 2.5 hours long and sessions were delivered twice weekly by a trained group facilitator (a psychologist or doctoral student in counseling psychology) and a peer co-facilitator who was not trained in CBT (a young gay- or bisexual-identified man). The groups were capped at a maximum of 12 participants each.

Briefly, in sessions 1 and 2 minority stress theory was introduced (Meyer, 2003) and ground rules were agreed upon to create a safe, non-judgmental, sex-positive atmosphere. In sessions 3 and 4, the stress and coping model was introduced (Folkman et al., 1991; Lazarus & Folkman, 1984) and participants identified SMART (specific, measurable, attainable, realistic, and time bound*;* Cothran, Wysocki, Farnsworth, & Clark, 2015) goals pertaining to sexual health and substance use. Session 5 focused on triggers and healthy coping strategies. Sessions 6 and 7

included psychoeducation about safer sex (especially anal sex, which may not be addressed in heteronormative public school sex education; Lapointe, 2014) and modeling and roleplaying sexual communication skills, such as asking about HIV and STI status, sexual role preferences, and condom negotiation. In session 8, the facilitators reinforced the healthy emotion-focused, problem-focused, and group coping strategies identified in previous sessions and affirmed the individual progress of each participant and of the group as a whole.

Each session ended with relaxation techniques (e.g., guided imagery, breathing training) and homework assignments designed to promote at-home practice of the skills presented in each session. Homework assignments were specific to the participant's stressors and mental health, sexual health, and substance use goals. For example, in session 5, participants' homework assignment helped to support their progress toward the sexual and substance use SMART goals they identified in session 4. The homework assignment consisted of a worksheet in which participants listed their SMART goal for drug/alcohol use and their SMART goal for sexual health; for each goal, they then identified (a) motivations for using substances/having sex, (b) stressors that interfere with their goal, (c) strategies that are not helpful when they are stressed, and (d) strategies that are helpful for coping with stress. Throughout the intervention, participants actively engaged in role-plays, practiced problem-solving, and applied newly-acquired skills and knowledge.

Data Analytic Plan

To assess treatment feasibility and acceptability, participant flow from recruitment through all data collection points was tracked and attrition proportions were calculated; in addition, qualitative data from participant exit interviews were analyzed thematically to determine satisfaction with the intervention, acceptability of the research protocol, and evidence

of any adverse events. Finally, *t*-tests and Fisher's exact tests were used to test for differences in outcome measures and demographics between completers and non-completers.

To examine treatment efficacy, effect sizes (Cohen's *d*) were computed for each outcome measure between (a) pre-treatment and post-treatment, (b) post-treatment and follow-up, and (c) pre-treatment and follow-up. In addition, 95% confidence intervals were calculated for each effect size to determine significance of change. Effect sizes and confidence intervals were calculated using an intent-to-treat approach, such that all participants who completed the pre-treatment assessment were analyzed, regardless of attrition status. Full information maximum likelihood was used to compute estimates, using Mplus version 7.11 (Muthén & Muthén, 1998-2015). Pearson's product-moment correlations examined the relationship between changes in minority stress outcomes and changes in mental and behavioral health outcomes.

Results

Treatment Feasibility and Acceptability

Participant recruitment began June 2013 and lasted through August 2013. The groups were conducted between July 2013 and September 2013. Because each group was limited to a maximum of 12 participants, only 36 eligible participants were invited to enroll in the study (for details of participant flow, see Figure 1). Follow-up assessments were completed by January 2014. Excluding those who dropped out, participants (N = 22) attended an average of 6.32 (SD = 1.25) of the eight sessions (79%). Independent-samples *t*-tests revealed no significant differences on any of the pre-treatment outcome measures between those who completed the intervention and those who did not (see Table 1). Regarding demographic characteristics, an independent-samples *t*-test revealed no significant difference in age between those who completed the intervention and those who did not complete the intervention, t = -.01, p = .996. Due to low cell

sizes, Fisher's Exact tests were used to explore other demographic differences between those who completed the intervention and those who did not. There were no significant differences between completers and non-completers on city (p = .47), language spoken at home (p = .63), sexual orientation (p = .51), ethnicity (p = .07), relationship status (p = .30), education (p = .30), the language of the group (i.e., English or French in Montreal; p = .66), and income (p = .09).

A total of 22 participants completed exit interviews at post-treatment; 19 of these 22 also completed exit interviews at follow-up (those who did not complete exit interviews were lost to follow-up and provided neither survey nor interview data). Exit interviews at both time points were positive. Qualitative data from the interviews revealed that all participants reported high satisfaction with the intervention and acceptability of all research procedures, including intervention length and survey procedures. No participant reported any adverse events.

Treatment Efficacy

Effect sizes (Cohen's *d*) were computed for each variable between (a) pre-treatment and post-treatment, (b) post-treatment and follow-up, and (c) pre-treatment and follow-up. Specifically, we calculated *d* as the difference between the two means divided by the standard deviation of the difference scores (Morris & DeShon, 2002). We calculated the 95% confidence interval for each *d* using the formula, $d \pm CV_{t_{\alpha/2}} \left(\sqrt{\frac{d^2}{2(n-1)} + \frac{2(1-r_{12})}{n}} \right)$, where *CV* is the critical value of *t* at α = .05 and r_{12} is the correlation between the two means (Kline, 2004). These calculations were done using an intent-to-treat approach, handling missing data via full information maximum likelihood.

As can be seen in Table 2, from pre-treatment to post-treatment, small and significant effect sizes were found for loneliness, self-esteem, internalized homonegativity, difficult process related to sexual orientation identity, and amphetamine use frequency. From post-treatment to

three-month follow-up, most changes either remained stable or increased. Self-esteem continued to increase, with a large and significant effect size. Comparing pre-treatment to three-month follow-up, a large and significant effect size was observed for self-esteem. Small and significant effect sizes were observed for loneliness, internalized homonegativity, sexual-orientation-related difficult process, and alcohol use frequency. Finally, a medium and significant effect size was observed for number of sexual partners.

To examine whether changes in minority stress variables were related to corresponding changes in outcomes, we correlated pre-treatment-to-follow-up changes in minority stress to pre-treatment-to-follow-up changes in outcomes. Again, these analyses were conducted using an intent-to-treat approach, handling missing data via full information maximum likelihood. Reductions in internalized homonegativity were related to reductions in depression (r = .28, p = .033) and amphetamine use (r = .49, p = .004). Reductions in sexual orientation concealment were related to reductions in loneliness (r = .31, p = .036) and marijuana use (r = .47, p < .001) and increases in self-esteem (r = -.30, p = .017). Reductions in need for privacy were related to reductions in anxiety (r = .54, p = .001), loneliness (r = .58, p < .001), marijuana use (r = .64, p < .001), and amphetamine use (r = .41, p = .018) and increases in self-esteem (r = -.36, p = .049). Reductions in acceptance concerns were related to reductions in depression (r = .33, p < .001), anxiety (r = .59, p < .001), loneliness (r = .72, p < .001), and marijuana use (r = .47, p < .001) and increases in self-esteem (r = -.55, p = .002). Finally, and contrary to predictions, reductions in some minority stressors were related to increases in condomless sex and number of sex partners. Specifically, increases in condomless sex were related to decreases in internalized homonegativity (r = -.45, p < .001), sexual orientation concealment (r = -.36, p = .001), and acceptance concerns (r = -.60, p = .003); increases in number of sex partners was related to

decreases in difficult process (r = -.42, p = .003). Note that from pre-treatment to follow-up, condomless sex was the only variable that did not show changes in the expected direction (see Table 2). Whereas there was a reduction from pre- to post-treatment in condomless sex, such was not the case from pre-treatment to follow-up.

Discussion

Despite calls for CBT to be adapted for use with sexual minority youth (e.g., Austin & Craig, 2015), few studies have examined the effect of mental health interventions for this population. This pilot trial provides preliminary evidence for the feasibility, acceptability, and potential efficacy of this behavioral group intervention for young GBM. Participants reported large increases in self-esteem, medium decreases in number of sex partners, and small decreases in loneliness and alcohol use frequency. Although not statistically significant in this trial, there was also evidence of small effects on depression and drug use. Participants also showed reductions in sexual-minority-specific stressors such as internalized homonegativity and difficulty developing a minority sexual identity. Moreover, changes in selected mental health outcomes were correlated with corresponding changes in some of the minority stress variables. Project PRIDE had a stronger focus on self-esteem and quality of life, which may explain the differential treatment outcomes. The significant improvements in self-esteem but not in anxiety or depression suggest that this form of intervention cannot replace therapeutic techniques found to be effective for reductions in psychopathology, such as behavioral scheduling or cognitive restructuring (Cuijpers, van Straten, & Warmerdam, 2007; Pachankis et al., 2015).

Project PRIDE also appears to demonstrate positive effects on health-related behaviors, specifically, reductions in number of sexual partners and alcohol use frequency. The significant effect for alcohol and not cocaine or amphetamine use frequency is likely due to the low

frequency of use of the latter two substances. For the three groups of participants presented here, the intervention therefore focused more on strategies for managing alcohol—as opposed to other forms of substance use—in Sessions 4 and 5, where SMART goals and substance use management were discussed. The intervention should be tested in participants who report more frequent use of other recreational drugs in order to determine whether the effects on alcohol use generalize to other substances. Condom use self-efficacy (Brafford & Beck, 1991) was not measured in the present study, but this construct could reveal whether participants' confidence in their ability to negotiate and use condoms changes as a function of receiving Project PRIDE.

Participants were not required to have the goal of decreasing condomless sex in order to be eligible for the study, nor was the intervention advertised as a program to support condom use. Eligible participants only had to report one instance of condomless anal sex in the last three months. The intervention was described to potential participants as a new program aimed at supporting young GBM in dealing with minority stress, and increasing pride, mental well-being, and sexual health. This is one possible explanation for the lack of reported long-term changes in condomless sex (there was a reduction from pre- to post-treatment but not from pre-treatment to follow-up). In addition, though speculative, the lack of findings for reductions in condomless sex may be related to decreased concern about HIV transmission among GBM in the era of effective HIV medications (e.g., Crepaz, Hart, & Marks, 2004). In our experience conducting Project PRIDE, participants expressed concern about condom use, but often reported greater concern instead about having too many partners and not having enough emotional intimacy during sex if they had multiple partners. The reduction in the number of sexual partners but not condom use may therefore reflect the idiosyncratic sexual health promotion goals of the participants described here.

The present findings extend previous studies showing that minority stressors were associated with psychological distress among LGB youth (Kelleher, 2009) and adults (Lewis, Derlega, Griffin, & Krowinski, 2003). We found that as there were reductions in minority stressors, so were there increases in self-esteem and decreases in mental and behavioral health outcomes. However, these findings were correlational in nature so we cannot infer whether reductions in minority stressors caused the positive outcomes. While the present findings provide additional support for the Minority Stress Model and Minority Stress Model-based interventions, future work is needed to determine causal effects. Specifically, a randomized controlled trial could determine if the intervention was responsible for salubrious health outcomes and would allow for tests of mediation to determine whether the mechanism of action of the intervention was indeed reductions in minority stress (see Smith, Tarakeshwar, Hansen, Kochman, & Sikkema, 2009, for an example of a randomized controlled trial that investigates of the mechanism of action of an intervention).

Limitations

The present study, with its small sample, cannot reliably detect if there was decreased condomless sex. Condomless sex decreased from pre-treatment to post-treatment, although our small sample size likely prohibited us from finding a significant effect. There was not a sustained effect over time, with rates of condomless sex returning to near baseline levels at follow-up. A larger sample size may yield significant effects and booster sessions may be warranted to help maintain behavioral changes over time. In addition, our measure of condomless sex combined sex with HIV-negative and unknown-serostatus partners. Thus, it is possible that participants were engaging in condomless sex with only HIV-negative partners, in which case condomless sex may not be a valid HIV risk factor. Future research should attempt to be more precise in

determining the HIV status of sex partners, keeping in mind that self-report of partners' serostatus is inherently problematic, both because of the potential for dishonesty and inability to definitively know another's status.

In addition, this study lacked biological data that might confirm whether a participant was HIV-negative, or whether he had contracted an STI or HIV during the study period. This study is also limited by its lack of a control group, which means that it is not certain that the changes over time are related specifically to the intervention. One-armed trials are susceptible to several biases, including regression to the mean and demand characteristics (Barnett, van der Pols, & Dobson, 2005; McCambridge, Kypri, & Elbourne, 2014). In the current study, participants were not instructed about engagement in other psychotherapy or psychoeducational treatments, nor did we assess whether participants were in other treatments. Thus, it is possible some participants were simultaneously receiving other treatment while enrolled in Project PRIDE. This limitation prohibits statements about the existence or lack of multiple treatment interference.

Lastly, the follow-up time period of three months cannot confirm whether changes that were stable or appeared to further demonstrate improvement from post-treatment to 3-month follow-up would be maintained in the long term. Future research is warranted to fully demonstrate that changes are sustainable and attributable to the intervention. Despite these limitations, the results suggest that Project PRIDE is a feasible intervention with the potential to increase self-esteem and decrease mental health problems and behavioral risk factors for HIV.

Future Directions

Pending further support for this intervention, Project PRIDE should be tested among other sexual and gender minority populations who face minority stress, including lesbian, queer-identified, and bisexual women and transgender individuals. Future studies of sexual minority

young adults should also examine the effects of treatments specifically among bisexual male youth, as they have higher psychological distress than gay male youth (Ross et al., 2014) and among young GBM at higher risk for HIV, such as African American and Latino GBM (Han et al., 2015) or young adults who experience unstable housing (Marshall et al., 2009). The promising findings also suggest a benefit in testing Project PRIDE in younger GBM, such as youth under the age of 18. Future research with greater statistical power should also examine mediators of minority stressors and health outcomes, such as coping, social support, and community connectedness (Meyer, 2003; Hatzenbuehler, 2009).

Given PRIDE's higher accessibility to counselors and mental health providers beyond experts in CBT, further research should consider whether there are differential effects of the program based upon level of CBT experience. Moreover, future research should test the feasibility and efficacy of delivering the intervention solely by paraprofessionals. The intervention was designed to be useable by paraprofessionals, with use only of simple behavioral techniques such as guiding participants in identifying stressors and achievable goals. In the current study, Project PRIDE was delivered by one paraprofessional and one therapist; therefore, testing the effects of the intervention when delivered exclusively by paraprofessionals is warranted. If successful, the greater accessibility of this intervention would allow for tests of effectiveness that go beyond traditional clinical settings. It is possible that Project PRIDE could be administered in other community-based settings, such as youth centers, AIDS service organizations, and other agencies serving young LGB adults.

The present study, which focused on addressing minority-specific stressors, also has implications for other behavioral intervention work. For example, interventions should consider religion both as a source of minority stress and as a source of social support and resilience

(Austin & Craig, 2015). In addition, given the central role of the internet in the lives of young GBM (e.g., Pingel, Bauermeister, Johns, Eisenberg, & Leslie-Santana, 2013), computerized interventions to reduce psychological distress (e.g., Lucassen et al., 2015) should continue to be examined as alternatives or adjuncts to face-to-face approaches.

Conclusions

The preliminary evidence for Project PRIDE is promising and suggests a benefit in examination of its efficacy through a randomized controlled trial. Increases at 3-month follow-up in self-esteem and reductions in alcohol use frequency and sexual minority-specific stressors suggest that these psychological problems can be addressed concurrently in one intervention. Project PRIDE, which was delivered by a combination of a psychological provider and a peer counselor who was not trained in CBT, may also be cost-effective to administer in both clinical and community settings without using the resources of mental health clinicians. As such, Project PRIDE appears to be a promising and potentially cost-effective intervention for reducing minority-stress-related outcomes among young GBM.

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Table 1

Comparisons of Treatment Outcome Measures Between Participants Who Completed and Did Not Complete the Intervention

	Completed treatment (N = 22)	Did Not Complete Treatment (N = 11)		
	Mean (SD)	Mean (SD)	t	p
Mental Health Outcomes				
Depression	18.26 (9.90)	18.45 (12.06)	-.05	.96
Anxiety	31.18 (6.67)	27.90 (5.53)	1.34	.19
Loneliness	39.45 (11.61)	39.91 (10.09)	-.11	.91
Self-esteem	17.59 (5.32)	18.88 (6.45)	-.61	.55
Minority Stress Outcomes				
Internalized Homonegativity	67.36 (15.52)	61.22 (13.05)	1.13	.27
Sexual Orientation Concealment	1.76 (.85)	1.37 (.61)	1.34	.19
Need for Privacy	4.43 (1.38)	3.98 (1.61)	.83	.41
Need for Acceptance	3.57 (1.33)	3.33 (1.41)	.49	.63
Difficult Process	3.71 (1.49)	3.62 (1.41)	.17	.87
Sexual Health Outcomes				
Number of Sex Partners	6.90 (7.91)	4.91 (2.55)	.81	.42
Condomless Sex	6.71 (8.67)	4.55 (4.61)	.77	.45
Substance Use Outcomes				
Alcohol Frequency	10.91 (8.81)	12.73 (9.56)	-.54	.59
Marijuana Frequency	4.41 (9.93)	12.09 (15.55)	-1.49	.16
Cocaine/Crack Frequency	.27 (.70)	.73 (1.35)	-1.05	.31
Amphetamines Frequency	.27 (.94)	3.27 (8.91)	-1.11	.29

Table 2

Estimated Effect Sizes, Means, and Standard Deviations of Treatment Outcome Measures

	Effect Size, *d* [95% CI]					
	Pre-treatment to Post-treatment	Post-treatment to Follow-up	Pre-treatment to Follow-up	Pre-treatment Mean (*SD*)	Post-treatment Mean (*SD*)	Follow-up Mean (*SD*)
Mental Health Outcomes						
Depression	-.23 [-.69, .23]	-10. [-.63, .43]	-.34 [-.76, .08]	18.33 (10.32)	15.14 (10.46)	13.52 (11.70)
Anxiety	-.24 [-.59, .10]	.05 [-.30, .41]	-.11 [-.56, .34]	30.16 (6.43)	28.36 (7.61)	28.90 (10.49)
Loneliness	-.36* [-.57, -.15]	-.15 [-.39, .09]	-.35* [-.67, -.02]	39.61 (10.80)	36.82 (11.01)	35.26 (11.97)
Self-esteem	.27* [.06, .47]	.88* [.54, 1.23]	.94* [.55, 1.32]	18.02 (5.57)	19.41 (6.51)	24.63 (7.09)
Minority Stress Outcomes						
Internalized Homonegativity	-.21* [-.42, -.01]	-.13 [-.28, .03]	-.28* [-.52, -.05]	65.32 (14.61)	62.35 (20.27)	61.07 (19.85)
Sexual Orientation Concealment	-.08 [-.31, .16]	.02 [-.15, .20]	-.05 [-.31, .21]	1.63 (.78)	1.58 (.93)	1.59 (1.03)
Need for Privacy	-.17 [-.35, .01]	-.04 [-.25, .17]	-.17 [-.38, .03]	4.28 (1.43)	4.07 (1.64)	4.03 (1.78)
Need for Acceptance	-.22 [-.46, .01]	.02 [-.16, .20]	-.22 [-.46, .01]	3.49 (1.32)	3.16 (1.93)	3.18 (1.69)
Difficult Process	-.30* [-.49, -.10]	-.04 [-.18, .11]	-.29* [-.48, -.10]	3.68 (1.42)	3.31 (1.83)	3.26 (1.99)
Sexual Health Outcomes						
Number of Sex Partners	-.07 [-.41, .26]	-.20 [-.59, .19]	-.54* [-84, -.24]	6.22 (6.58)	5.62 (10.51)	3.65 (6.45)
Condomless Sex	-.23 [-.62, .16]	.16* [.01, .32]	.04 [-.37, 46]	5.97 (7.51)	3.95 (8.63)	6.93 (23.70)
Substance Use Outcomes						
Alcohol Frequency	-.25 [-.56, .05]	-.18 [-.43, .07]	-.36* [-.71, -.01]	11.52 (8.82)	9.18 (9.62)	8.00 (9.21)

Marijuana Frequency	-.37 [-.78, .03]	.18 [-.03, .38]	-.23 [-.69, .22]	6.97 (12.21)	2.46 (4.17)	3.58 (9.47)
Cocaine/Crack Frequency	-.21 [-.50, .08]	.02 [-.50, .53]	-.14 [-.67, .40]	0.42 (.95)	.18 (1.02)	.21 (1.18)
Amphetamines Frequency	-.19* [-.27, -.12]	-.16 [-.68, .37]	-.22 [-.82, .37]	1.27 (5.16)	.27 (.84)	.11 (.59)

Note. Total *N* at pre-treatment = 33. Estimates are based on intent-to-treat using full information maximum likelihood.

*95% confidence interval does not contain zero.

Figure 1. Participant flow.