

# LGB-Affirmative Cognitive-Behavioral Therapy for Young Adult Gay and Bisexual Men: A Randomized Controlled Trial of a Transdiagnostic Minority Stress Approach

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**Objectives:** We tested the preliminary efficacy of a transdiagnostic cognitive-behavioral treatment adapted to improve depression, anxiety, and co-occurring health risks (i.e., alcohol use, sexual compulsivity, condomless sex) among young adult gay and bisexual men. Treatment adaptations focused on reducing minority stress processes that underlie sexual orientation-related mental health disparities. **Method:** Young gay and bisexual men ( $n = 63$ ;  $M$  age = 25.94) were randomized to immediate treatment or a 3-month waitlist. At baseline, 3-month, and 6-month assessments, participants completed self-reports of mental health and minority stress and an interview of past-90-day risk behavior. **Results:** Compared to waitlist, treatment significantly reduced depressive symptoms ( $b = -2.43$ , 95% CI:  $-4.90, 0.35$ ,  $p < .001$ ), alcohol use problems ( $b = -3.79$ , 95% CI:  $-5.94, -1.64$ ,  $p < .001$ ), sexual compulsivity ( $b = -5.09$ , 95% CI:  $-8.78, -1.40$ ,  $p < .001$ ), and past-90-day condomless sex with casual partners ( $b = -1.09$ , 95% CI:  $-1.80, -0.37$ ,  $p < .001$ ), and improved condom use self-efficacy ( $b = 10.08$ , 95% CI:  $3.86, 16.30$ ,  $p < .001$ ). The treatment yielded moderate and marginally significant greater improvements than waitlist in anxiety symptoms ( $b = -2.14$ , 95% CI:  $-4.61, 0.34$ ,  $p = .09$ ) and past-90-day heavy drinking ( $b = -0.32$ , 95% CI:  $-0.71, 0.07$ ,  $p = .09$ ). Effects were generally maintained at follow-up. Minority stress processes showed small improvements in the expected direction. **Conclusion:** This study demonstrated preliminary support for the first intervention adapted to address gay and bisexual men's co-occurring health problems at their source in minority stress. If found to be efficacious compared to standard evidence-based treatments, the treatment will possess substantial potential for helping clinicians translate LGB-affirmative treatment guidelines into evidence-based practice.

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**What is the public health significance of this article?**

Sexual orientation-related disparities in depression and anxiety co-occur with alcohol use, sexual compulsivity, and risky sexual behavior to form a syndemic health threat surrounding young gay and bisexual men. Clear and consistent evidence suggests that a major source of this syndemic is minority stress—the stress associated with stigma-related social disadvantage that compounds general life stress. This study represents the first test of an adapted cognitive-behavioral intervention designed to alleviate minority stress among young gay and bisexual men to improve the co-occurring health conditions facing this population.

**Keywords:** minority stress, stigma, LGB-affirmative, intervention, cognitive-behavioral therapy (CBT)

From an early age, gay and bisexual men are significantly more likely to experience various forms of clinically significant distress such as major depressive disorder and several anxiety disorders compared to heterosexual men (Fergusson, Horwood, & Beautrais, 1999; Fergusson, Horwood, Ridder, & Beautrais, 2005; Saewyc, 2011). These mental health disparities combine with several health-risk behaviors, including alcohol use, sexual compulsivity, and condomless anal sex, to pose a synergistic threat, or syndemic, surrounding gay and bisexual men's health (Mustanski, Garofalo, Herrick, & Donenberg, 2007; Parsons, Rendina, Moody, Ventuneac, & Grov, in press; Safren, Reisner, Herrick, Mimiaga, & Stall, 2010; Stall et al., 2003). Studies using diverse methodologies consistently locate the source of sexual-orientation-related mental health disparities in gay and bisexual men's disproportionate exposure to minority stress—the stress associated with stigma-related social disadvantage that compounds general life stress (Mays & Cochran, 2001; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010; Meyer, Schwartz, & Frost, 2008). Minority stress emerges from stigmatizing societal structures—termed *structural stigma* (Hatzenbuehler, 2014)—that deny sexual minority individuals (i.e., those who identify as gay, bisexual, or lesbian or engage in same-sex sexual behavior) the same rights and opportunities afforded heterosexuals. Structural stigma, in turn, justifies discrimination within families, religious communities, schools, workplaces, and everyday social interactions, elevating the stress, and therefore the mental health burden, experienced by sexual minorities across development.

Minority stress theory posits that societal stigma compromises gay and bisexual men's health through several psychosocial stress processes (Meyer, 2003). Some of these processes are specific to being gay or bisexual, such as internalized homophobia (Newcomb & Mustanski, 2010), stigma-based rejection sensitivity (Pachankis, Goldfried, & Ramrattan, 2008), and sexual orientation concealment (Pachankis, 2007; Pachankis et al., 2008). These cognitive, affective, and behavioral minority stress processes are associated with mental health problems and several health-risk behaviors, such as alcohol use, sexual compulsivity, and condomless anal sex (Feinstein, Goldfried, & Davila, 2012; Newcomb & Mustanski, 2011; Pachankis, Hatzenbuehler, & Starks, 2014; Pachankis, Rendina et al., 2014). Yet other cognitive, affective, and behavioral processes disrupted by gay and bisexual men's stigma exposure are not specific to being gay or bisexual, and serve as universal risk factors for mental health problems (Hatzenbuehler, 2009). For example, sexual minorities report more hopelessness, rumination, and social isolation compared to heterosexuals, even from an early

age, which accounts for sexual minorities' elevated reports of mental health problems and associated health-risk behaviors across development (Hatzenbuehler, McLaughlin, & Nolen-Hoeksema, 2008; Hatzenbuehler, Nolen-Hoeksema, & Dovidio, 2009; Safren & Heimberg, 1999).

Because these minority stress processes and associated universal risk factors are theoretically modifiable, testing the efficacy of a treatment that addresses them represents a promising direction for improving gay and bisexual men's mental health and reducing syndemic health risks (Hatzenbuehler, 2009). While professional guidelines exist for LGB-affirmative clinical practice with sexual minority individuals (American Psychological Association, 2012), the field currently lacks evidence for translating this guidance into practice (Cochran, 2001). This represents a notable gap given that gay and bisexual men are more likely to utilize mental health services compared to heterosexual men (Cochran, Sullivan, & Mays, 2003). The effectiveness of existing mental health interventions as applied to sexual minorities and the potential for these interventions to be adapted to specifically address the cognitive, affective, and behavioral stress processes experienced by gay and bisexual men remain to be determined.

Cognitive-behavioral therapy (CBT) is well suited to improving cognitive, affective, and behavioral minority stress processes for several reasons (Balsam, Martell, & Safren, 2006; Pachankis, 2014). First, CBT locates present maladaptive behaviors in the context of their developmental function and current environmental contingencies, such as seeing depression and health-risk behaviors as learned responses for coping with minority stress. Second, CBT empowers clients to cope with adverse environmental circumstances such as minority stress by promoting coping self-efficacy. Third, CBT encourages the replacement of maladaptive cognitive, affective, and behavioral stress responses, such as those emerging from minority stress and driving gay and bisexual men's adverse health. Fourth, CBT targets the universal risk factors disproportionately affecting sexual minorities. Therefore, encouraging adaptive reactions to stigma, such as locating the source of one's mental health problems in minority stress, drawing on personal resilience as a gay or bisexual man, and learning strategies for reducing maladaptive minority stress reactions such as internalized homophobia or rejection sensitivity have been argued to naturally lend themselves to a CBT approach (Pachankis, 2014; in press). Despite several successful case studies of LGB-affirmative CBT applied to gay and bisexual men's mental health (Kaysen, Lostutter, & Goines, 2005; Safren & Rogers, 2001; Walsh & Hope,

2010), the efficacy of these approaches for reducing minority stress among gay and bisexual men has not yet been examined.

Mental health interventions require cultural adaptation when distinct psychosocial processes function to disadvantage a particular population or when that population experiences barriers to reaping full benefit from existing interventions (National Advisory Mental Health Council's Workgroup, 2010). For example, adapting empirically supported interventions such as CBT for ethnic minorities often produces enhanced outcomes (Griner & Smith, 2006). The present study tests the efficacy of the first CBT adaptation to improve young gay and bisexual men's mental health and related psychosocial health through improving the cognitive, affective, and behavioral processes through which minority stress operates to compromise health. The adapted intervention targets both minority stress processes (i.e., rejection sensitivity, internalized homophobia, concealment) and universal risk factors (i.e., hopelessness, rumination, social isolation, unassertiveness) shared across gay and bisexual men's syndemic health conditions. The intervention platform, the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (Unified Protocol; Barlow et al., 2010), is transdiagnostic in that its components are suitable for addressing any maladaptive behavioral patterns driven by these processes, including mental health and associated health-risk behaviors. As described in detail elsewhere (Pachankis, 2014), guidance for adapting the Unified Protocol to address minority stress was garnered from expert mental health care providers with extensive experience treating gay and bisexual men and from depressed and anxious gay and bisexual men who were experiencing co-occurring syndemic health risks.

The present study examines the potential efficacy of this CBT approach adapted for young adult gay and bisexual men's minority stress experiences in reducing mental health and associated health-risk behaviors. Young adulthood represents a developmental period in which behavioral patterns are formed and identity-related stress is particularly likely to impair health (Arnett, 2000; Pachankis, Hatzenbuehler et al., 2014). Interventions to help young gay and bisexual men navigate the stress and challenges specific to their young adulthood experiences can shape lifelong healthy trajectories, halt the onset and persistence of mental health and substance use disorders, and avert co-occurring risk of HIV infection (Safren et al., 2010). Yet, no intervention has been tested for efficacy for improving young gay and bisexual men's mental health, despite the fact that this population represents one of the most prominent risk groups for depression, anxiety, substance use problems, and HIV infection (Fergusson et al., 1999, 2005; Garofalo et al., 1998; Saewyc, 2011).

Given the early stages of mental health intervention adaptation for sexual minorities, we employed a waitlist controlled trial to determine the adapted intervention's preliminary efficacy and promise for future testing against existing interventions. Examined outcomes included the psychosocial syndemic conditions that disproportionately burden young gay and bisexual men's health, including depression, anxiety, alcohol use, sexual compulsivity, and beliefs about and engagement in condomless anal sex. We focus the treatment on young adult gay and bisexual men, given that sexual orientation-related mental health disparities begin relatively early in development (e.g., Fergusson et al., 1999). We also examined the ability of the intervention to reduce cognitive, affective, and behavioral minority stress processes as well as uni-

versal processes shown or hypothesized to be elevated among gay and bisexual men, as mechanisms through which the adapted minority stress treatment might operate.

## Method

### Participants

In 2013 and 2014, we recruited participants through advertisements posted to social and sexual networking websites and mobile applications (e.g., Facebook, sex party listservs, a popular mobile sex-seeking app), college counseling centers, and community-based organizations serving the LGBT community. All participants completed a brief screening questionnaire over the phone to confirm eligibility, which was defined as: (a) being born male and currently identifying as a man; (b) gay or bisexual identity; (c) aged 18 to 35; (d) English fluency; (e) residing in the New York City area; (f) being HIV-negative; (g) engaging in HIV-risk behavior (i.e., at least one instance of condomless anal sex with a casual male partner or with an HIV-positive or status-unknown main male partner); (h) experiencing symptoms of depression and/or anxiety in the past 90 days; and (i) not currently receiving regular mental health services (i.e., not more than once a month). Past-90-day depression and anxiety were assessed using the 4-item Brief Symptom Inventory–Screening scale (Lang, Norman, Means-Christensen, & Stein, 2009) adapted from the Brief Symptom Inventory (Derogatis, 2001). Participants responded to each of the four items (i.e., “nervousness or shakiness inside,” “feeling tense or keyed up,” “feeling blue,” “feelings of worthlessness”) using a 5-point scale from 0 (*not at all*) to 4 (*extremely*). A minimum cutoff of 2.5 on either the depression or anxiety scale was chosen as an inclusion criterion for this study (Lang et al., 2009).

Figure 1 describes the sample size throughout all study phases, including exclusion, ineligibility, and refusal of screened participants. The final analytic sample comprised 63 sexual minority men. 73.09% completed 3-month assessments; 81.15% completed 6-month assessments. As can be seen in Table 1, the sample was diverse with regard to racial/ethnic background, employment status, and educational attainment. In contrast, a large majority was gay/queer-identified and single at baseline. Average age was approximately 26 years.

### Procedure

**Telephone screening.** Upon reviewing a physical or online study advertisement, interested individuals contacted the research office to complete an eligibility screening by phone. During the call, a research assistant assessed consent for phone screening; described the study, including a description of the treatment and two conditions; and asked questions to assess eligibility. Eligible participants were sent an online link containing at-home baseline measures and scheduled for an in-office appointment to complete the remaining baseline measures and to be randomized to condition. A research assistant ensured that each participant completed at-home baseline measures before arriving to the office.

**Experimental design.** Upon completing the in-office portion of the baseline assessment and confirming eligibility, participants were randomized to either immediate treatment or waitlist. Ran-

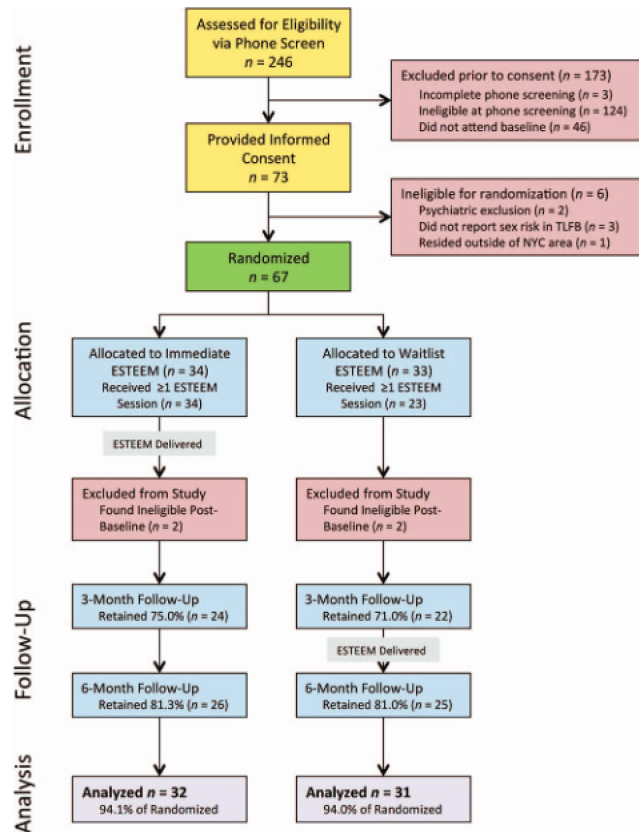


Figure 1. Flow diagram of participants' progress through the study phases. ESTEEM = Effective Skills to Empower Effective Men. See the online article for the color version of this figure.

domization was stratified according to race/ethnicity, such that equal numbers of White and non-White participants were assigned to each condition, as well as to anxiety/depression, such that equal numbers of individuals who met criteria for depression only, anxiety only, or both were assigned to each condition. Participants assigned to receive immediate treatment completed their first session immediately following their in-office baseline assessment. Waitlist participants received one phone call or e-mail per month to remind them of their upcoming appointment. Treatment and wait-list occurred over the course of 3 months. Participants completed assessments at baseline, 3 months, and 6 months; demographic questions were only assessed at baseline. To ease participant burden, at each assessment point participants completed approximately half of the survey measures at home by computer and the other half of survey measures in the study office by computer. After completing all surveys, they completed the timeline follow-back interview with a trained interviewer. Immediate treatment participants received treatment between the baseline and 3-month assessment. Waitlist participants received treatment between the 3-month and 6-month assessment. Thus, for immediate treatment participants, these assessments are referred to as immediate pretreatment, posttreatment, and 3-month follow-up; for waitlist participants, these assessments are referred to as 3-month pretreatment, immediate pretreatment, and posttreatment, respectively.

**Intervention.** ESTEEM (Effective Skills to Empower Effective Men) is a 10-session intervention based on the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (Barlow et al., 2010), an individually delivered cognitive-behavioral treatment with efficacy for reducing stress-sensitive mental health disorders (e.g., depression, anxiety) by enhancing emotion regulation abilities; reducing maladaptive cognitive, affective, and behavioral avoidance patterns; and improving motivation and self-efficacy for enacting behavior change (Ellard, Fairholme, Boisseau, Farchione, & Barlow, 2010; Farchione et al., 2012). The Unified Protocol promotes these changes through modules that focus on motivation enhancement, interoceptive and situational exposure, cognitive restructuring, mindfulness, and self-monitoring techniques grounded in established cognitive and behavioral theories and techniques of behavior change across psychosocial problems and disorders. In an extensive adaptation process described in detail elsewhere (Pachankis, 2014), we adapted the Unified Protocol specifically to enhance gay and bisexual men's stigma coping by reducing minority stress

Table 1  
Demographic Variables

Variable	Immediate intervention (n = 32)		Waitlist control (n = 31)		Condition comparisons
	n	%	n	%	
Age, years					<i>t</i> = .47 <i>ns</i>
Mean	26.19		25.69		
SD	4.26		4.28		
Race					$\chi^2 = 5.56$ <i>ns</i>
American Indian or Alaskan Native	0	0.0	1	3.2	
Asian	0	0.0	3	9.7	
Black/African American	6	18.8	4	12.9	
Pacific Islander	1	3.1	1	3.2	
White	16	50.0	17	54.8	
Other/mixed	9	31.3	5	32.3	
Hispanic/Latino					$\chi^2 = 0.03$ <i>ns</i>
Yes	12	37.5	11	35.5	
No	20	62.5	20	64.5	
Sexual orientation					$\chi^2 = 2.06$ <i>ns</i>
Gay/queer	31	96.9	27	87.1	
Bisexual	1	3.1	4	12.9	
Education					$\chi^2 = 3.88$ <i>ns</i>
High school, GED, or less	2	6.3	6	19.4	
Some college or Associates degree	14	59.4	10	41.9	
Currently in college	5	15.6	3	9.4	
4-year college degree	9	28.1	8	25.8	
Graduate school	2	6.3	4	12.9	
Income					$\chi^2 = 6.92$ <i>ns</i>
Less than \$20,000/year	17	53.1	14	45.2	
\$20,000 to \$49,999/year	10	31.3	14	45.2	
More than \$50,000/year	5	15.6	3	9.7	
Employment status					$\chi^2 = 5.43$ <i>ns</i>
Full-time	9	28.1	16	51.6	
Part-time	12	37.5	8	25.8	
On disability	0	0.0	1	3.2	
Student (unemployed)	6	18.8	4	12.9	
Unemployed	5	15.6	2	6.5	
Relationship status					$\chi^2 = 0.08$ <i>ns</i>
Single	26	81.2	26	83.9	
In a relationship	6	18.8	5	16.1	

processes (see Figure 2). For example, modules were adapted to help participants identify minority stress experiences; track cognitive, affective, and behavioral reactions to minority stress, with a focus on avoidance reactions, including substance use and condomless anal sex; attribute distress to minority stress rather than to personal failure; and enact assertive, self-affirming behaviors for coping with minority stress in safe situations. Adaptations were infused throughout the Unified Protocol *Therapist Workbook* (Barlow et al., 2010); this adaptation served as the therapist manual for each session. Module content is described briefly below and in detail elsewhere (Pachankis, 2014).

Session 1 focused on discussing primary mental, behavioral, and sexual health issues; building motivation to address those issues; and reviewing participants' unique strengths as gay or bisexual

men. Session 2 reviewed the impact of minority stress on health, specific manifestations of minority stress, and current coping strategies. Session 3 raised awareness of the emotional impact of early and ongoing forms of minority stress. Session 4 raised awareness of the behavioral impact of minority stress and taught mindful, present-focused reactions to minority stress. Session 5 raised awareness of the cognitive impact of minority stress and posed cognitive restructuring activities. Session 6 engaged participants in a review of the impact of emotions on mental, behavioral, and sexual health and personal emotion avoidance tendencies driven by minority stress. Session 7 focused on the impact of minority stress on behavioral avoidance with a focus on creating an emotional and behavioral avoidance hierarchy. Session 8 engaged participants in behavioral experiments in which previously avoided

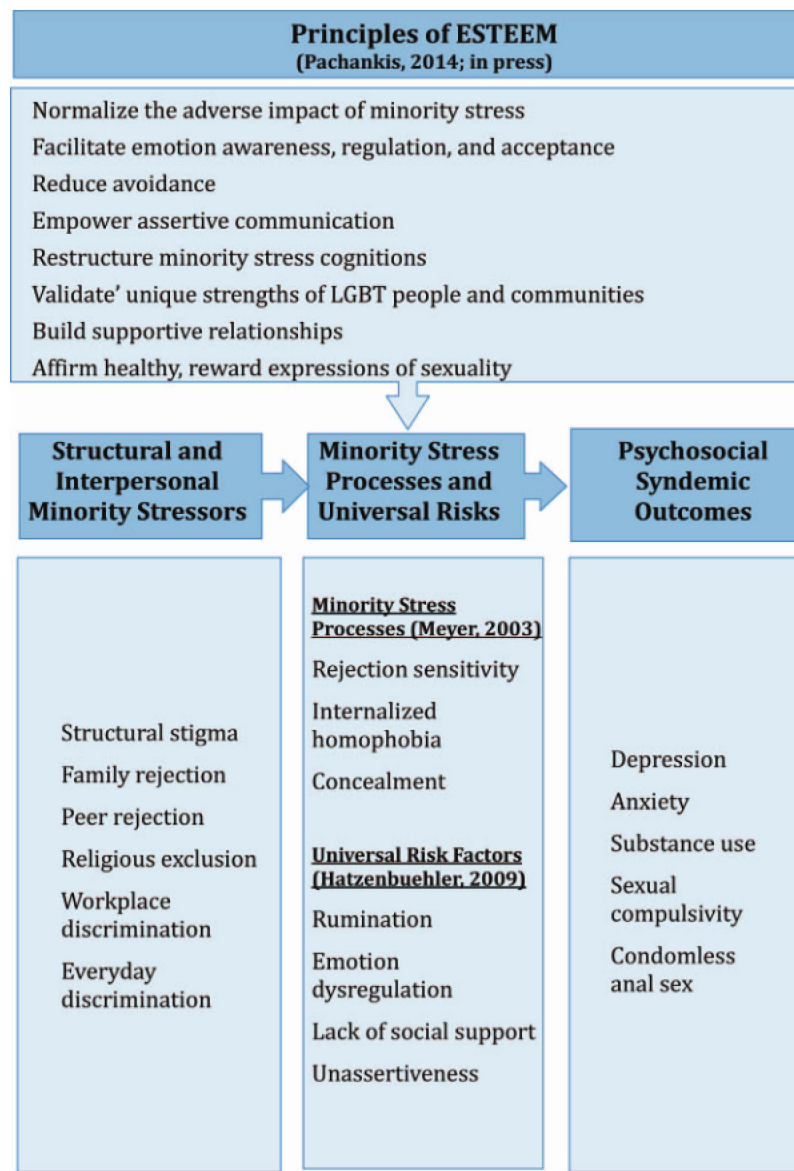


Figure 2. Theoretical model and principles of Effective Skills to Empower Effective Men (ESTEEM). Adapted from Pachankis (in press). See the online article for the color version of this figure.

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experiences were gradually confronted. Session 9 continued the graduated behavioral experiments with a focus on assertiveness as a skill for coping with minority stress. Session 10 reviewed new cognitive, affective, and behavioral coping strategies and their application to future minority stress experiences (Pachankis, 2014). Therapists assigned between-session homework after sessions to promote skill generalization.

Three advanced clinical psychology doctoral students delivered the intervention. One therapist identified as a lesbian, one as a gay man, and one as a heterosexual woman.

**Treatment supervision and fidelity.** The first author, a clinical psychologist, supervised the delivery of the intervention over 1 year in weekly group and individual meetings. All sessions were video-recorded for supervision; the first author reviewed 23.5% ( $n = 84$ ) of all sessions, coded them using a treatment fidelity checklist created for this study, and reviewed the checklist results as well as qualitative feedback with each therapist. Fidelity checklists were specific to each session and contained between five and seven items per session. For instance, for Session 1, fidelity items stated, “Explain rationale behind ESTEEM, including introducing concept of minority stress and its relationship to anxiety and depression” and “Initiate discussion with participant about pros and cons of changing” rated on a scale from 0 (*not covered at all*) to 2 (*covered thoroughly*). Average fidelity rating (84.6%) for the 84 reviewed sessions indicated that therapists adhered to the session content specified in the treatment manual. However, this likely represents a conservative estimate since sessions were not reviewed randomly; therapists typically suggested their most challenging sessions for supervisory review.

**Session attendance.** Of the 54 randomized participants who completed at least one ESTEEM session, 24 (44.4%) completed all 10 sessions, 35 (64.8%) completed at least half of the sessions, and 15 (27.8%) completed only one session. We utilized an intent-to-treat approach by including all eligible randomized cases ( $n = 63$ ).

## Primary Outcome Measures

**Alcohol Use Disorders Identification (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993).** The AUDIT is a 10-item screening inventory used to identify hazardous drinking across settings and populations. Item responses (e.g., 0 [*never*] to 4 [*daily or almost daily*]) are scored from 0 to 4 with qualitative anchors depending on the item (e.g., “How often during the last year have you had a feeling of guilt or remorse after drinking?”). A cutoff value of 8 balances sensitivity and specificity to identify harmful alcohol use. Validity data come from prospective prediction of alcohol use impairment (e.g., Conigrave, Saunders, & Reznik, 1995). In the present study, the scale demonstrated strong interitem consistency ( $\alpha = .85$ ).

**Center for Epidemiological Studies Depression Scale (CESD; Radloff, 1977).** The CESD consists of 20 items that ask individuals to rate how often they have experienced symptoms of depression (e.g., “had trouble keeping my mind on what I was doing,” “felt depressed,” “talked less than usual”) in the past week along a 4-point scale from 1 (*rarely or none of the time* [less than 1 day]) to 4 (*most or all of the time* [5–7 days]). The CES-D contains a sensitive and specific clinical cutoff (i.e., 16 or greater) to identify individuals at risk for major depres-

sion (Lewinsohn, Seeley, Roberts, & Allen, 1997). Reliability of the CESD was strong in the present study ( $\alpha = .86$ ).

**Overall Depression Severity & Impairment Scale (ODSIS; Bentley, Gallagher, Carl, & Barlow, 2014).** The ODSIS contains five items that assess past-week depressive symptom severity and impairment and possesses strong utility for monitoring treatment response. Response options range from 0 to 4; qualitative response anchors are specific to each question. For example, responses to the item “In the past week, how much has depression interfered with your social life and relationships?” range from 0 (*None: My depression doesn't affect my relationships*) to 4 (*Extreme: My depression has completely disrupted my social activities. All of my relationships have suffered or ended. My family life is extremely strained*). The ODSIS distinguishes between individuals with and without a mood disorder and is appropriate for assessing depressive symptom severity in those with clinical and subclinical levels of depression. A cutoff score of 8 maximizes sensitivity against specificity and correctly classified 82% of outpatients as with or without a mood disorder in a recent validation study (Bentley et al., 2014). Interitem reliability was high in the present study ( $\alpha = .88$ ).

**Overall Anxiety Severity & Impairment Scale (OASIS; Norman, Cissell, Means-Christensen, & Stein, 2006).** The OASIS is a 5-item scale that assesses severity and impairment associated with any anxiety disorder over the past week among clinical and nonclinical samples. An example item is: “In the past week, when you have felt anxious, how intense or severe was your anxiety?” with response option 0 (*Little or none: Anxiety was absent or barely noticeable*), to 4 (*Extreme: Anxiety was overwhelming. It was impossible to relax at all. Physical symptoms were unbearable*). A cutoff score of 8 maximizes sensitivity against specificity and correctly classified 87% of outpatients as with or without an anxiety disorder (Campbell-Sills et al., 2009). Interitem reliability was  $\alpha = .76$  in the present study.

**Sexual Compulsivity Scale (SCS; Kalichman & Rompa, 2001).** The SCS contains 10 items (e.g., “my desires to have sex have disrupted my daily life”), rated from 1 (*not at all like me*) to 4 (*very much like me*). Item responses are summed to derive an overall score (range 10–40). The SCS has high reliability and validity across multiple studies (Hook, Hook, Davis, Worthington, & Penberthy, 2010) and demonstrated strong internal consistency here ( $\alpha = .89$ ). A score of 24 or higher is frequently used to identify problematic sexual compulsivity (e.g., Grov, Parsons, & Bimbi, 2010; Ventuneac, Rendina, Grov, Mustanski, & Parsons, 2015).

**Safer Sex Self-Efficacy Questionnaire (SSSE; Rendina, 2014).** The 13-item SSSE assesses self-efficacy for condom use in various situations (e.g., “When you really need affection,” “When your partner says he/she does not want to use a condom”) in response to the prompt, “How confident are you that you could avoid having anal sex without a condom?” using a scale ranging from 1 (*not at all confident*) to 5 (*extremely confident*). The SSSE predicts condomless anal intercourse among men who have sex with men (MSM; Rendina, 2014). In the present study, the SSSE demonstrated strong internal consistency ( $\alpha = .94$ ).

**90-day Time Line Follow Back (TLFB; Sobell & Sobell, 1992).** Past 90-day condomless anal sex and alcohol use were assessed with the TLFB. In the TLFB, a trained interviewer reviews a past-90-day calendar and life events (e.g., parties, vaca-

tions) with each participant to assess participants' engagement in risk behavior during that time. The TLFB demonstrates strong reliability and validity, including agreement with real-time assessments and collateral reports of alcohol use (Carney, Tennen, Affleck, del Boca, & Kranzler, 1998) and sex risk (Carey, Carey, Maisto, Gordon, & Weinhardt, 2001). Each day was coded for heavy alcohol use (5+ drinks during that day), sexual partner type (main, casual), and condom use.

### Measures of Minority Stress Processes

**Measure of Gay-Related Stress (MOGS; Lewis, Derlega, Griffin, & Krowinski, 2003).** The MOGS contains 56 stressors related to being gay (e.g., "lack of support from family members due to my sexual orientation," "lack of security at work because I am gay"), which participants rated in terms of the negative and positive impact each stressor had if it occurred in the past 12 months along a scale ranging from -3 (*extremely negative*) to 3 (*extremely positive*). Since few participants reported that the events had a positive impact on them, a mean of the absolute value of only the negatively rated items was used. The negative impact of gay-related stress predicts depressive symptoms over-and-above general life stress (Lewis et al., 2003). Internal consistency was not calculated since not all stressors applied to all participants.

**Gay-related Rejection Sensitivity Scale (GRS; Pachankis et al., 2008).** The GRS assesses the degree to which gay and bisexual men would be anxious about being rejected in each of 14 vignettes because of their sexual orientation, from 1 (*very unconcerned*) to 6 (*very concerned*), and the degree to which they would expect such rejection from 1 (*very unlikely*) to 6 (*very likely*). An example vignette is: "A 3-year old child of a distant relative is crawling on your lap. His mom comes to take him away." For each vignette, participants' responses to the anxiety scale are multiplied by their expectation scale score and an average of the 14 resulting scores is taken. Previous uses of this scale have yielded associations with depression, social anxiety, substance use, and sexual compulsivity (Feinstein et al., 2012; Pachankis, Rendina et al., 2014). Internal consistency was  $\alpha = .91$  in the present study.

**Internalized Homophobia Scale (IHP; Martin & Dean, 1992).** The IHP assesses how troubled gay and bisexual men report being about their sexual identities over the past year. Participants rate nine items (e.g., "You felt it best to avoid personal or social involvement with other people who are LGB") using a scale from 1 (*never*) to 4 (*often*). The IHP is associated with general mental and sexual health problems in a sample of adult gay men (Meyer, 1995). Interitem consistency ( $\alpha$ ) was 0.90 in the present study.

**Sexual Orientation Concealment Scale (SOCS; Meyer, Rossano, Ellis, & Bradford, 2002).** Participants indicated the degree to which they were "out of the closet" to five domains of people: family; gay, lesbian, and bisexual friends; straight friends; coworkers; and health care providers, using a scale from 1 (*out to all*) to 4 (*out to none*). The SOCS has shown significant positive associations with internalized homophobia and negative associations with gay community connectedness (Frost & Meyer, 2009). Internal consistency was  $\alpha = .74$ .

### Measures of Universal Risk Factors

**Ruminative Responses Scale (Treynor, Gonzalez, & Nolen-Hoeksema, 2003).** Rumination was assessed with this 22-item scale assessing characteristic ways of responding to depressed mood (e.g., "Go someplace alone to think about your feelings"), including inward-looking problem solving and passive brooding, using a 4-point Likert-type scale from 1 (*never*) to 5 (*always*). In this study, the scale demonstrated strong interitem consistency ( $\alpha = .90$ ).

**Difficulties of Emotion Regulation Scale (DERS; Gratz & Roemer, 2004).** The DERS contains 36 items assessing problems regulating emotions across six domains: nonacceptance of emotional responses (e.g., "When I'm upset, I become embarrassed for feeling that way"), difficulties engaging in goal-directed behavior (e.g., "When I'm upset, I have difficulty focusing on other things"), impulse control difficulties (e.g., "I experience my emotions as overwhelming and out of control"), lack of emotion awareness (e.g., "I am attentive to my feelings"; reverse-coded), limited access to emotion regulation strategies (e.g., "When I'm upset, I believe that I will remain that way for a long time"), and lack of emotion clarity (e.g., "I have no idea how I am feeling"). Participants indicate how much each statement applies to them from 1 (*almost never [0-10%]*) to 5 (*almost always [91-100%]*). We utilized the full-scale score, calculated as the mean response across the 36 items ( $\alpha = .93$ ), which has been associated with self-regulation of negative moods, experiential avoidance, self-injurious behaviors, anxiety and depression, and sexual compulsivity (Gratz & Roemer, 2004; Pachankis, Rendina et al., 2014).

**Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Powell, Farley, Werkman, & Berkoff, 1990).** The MSPSS is a 12-item measure of the amount of perceived support from three sources: family (e.g., "I get the emotional help and support I need from my family"), friends (e.g., "I can talk about my problems with my friends"), and significant other (e.g., "There is a special person who is around when I am in need"), on a scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Interitem consistency was high in the present study ( $\alpha = .90$ ).

**Rathus Assertiveness Schedule (RAS; Rathus, 1973).** The RAS is a 30-item self-report measure of assertive behavior (e.g., "I am open and frank about my feelings") rated from 1 (*very uncharacteristic of me*) to 6 (*very characteristic of me*). The item "I often don't know what to say to attractive persons of the opposite sex" was replaced with "I often don't know what to say to attractive persons of the same sex" ( $\alpha = .87$ ).

### Analytic Plan

To test intervention efficacy, we utilized an intent-to-treat approach by including all eligible randomized cases ( $n = 63$ ). We first used *t* tests and chi-square tests to examine demographic differences between the immediate treatment and waitlist control conditions (see Table 1). As there were no significant demographic differences between conditions, we did not enter covariates into efficacy analyses. We used linear mixed models with maximum likelihood estimation to test condition, time, and condition  $\times$  time interaction effects for all continuous outcomes (i.e., minority stress processes, universal psychosocial risk factors, mental health and health-risk behavior) and generalized linear mixed models with

negative binomial distributions and maximum likelihood estimation to test these effects for all count outcomes (i.e., past-90-day number of condomless anal sex acts with casual partners, past-90-day number of heavy drinking days). Compound symmetry was used to model the covariance structure within participants.

In the first set of analyses, we examined the effect of immediate ESTEEM ( $n = 32$ ) compared to 3-month wait ( $n = 31$ ) by examining interactions between condition (treatment = 1, waitlist = 0) and time with data points limited to baseline assessment (= 0) and 3-month assessment (= 1) for both conditions. Therefore, we compared the effect of receiving ESTEEM versus waiting over 3 months. Effect sizes were calculated as  $d = 2t/\sqrt{df}$  using the  $t$  statistic of the interaction. In a second set of analyses, we examined clinical significance of the changes by comparing the effect of condition, time, and their interaction in generalized linear mixed models predicting the odds of meeting clinical cutoffs on those measures for which cutoffs were available (i.e., CESD, ODSIS, OASIS, AUDIT, Sexual Compulsivity Scale) from baseline to 3-month assessment (i.e., from immediate pretreatment to posttreatment for immediate treatment participants; from 3-month pretreatment to immediate pretreatment for waitlist participants). We converted odds ratios to proportions to provide more meaningful results. In the third set of analyses, we pooled data from both conditions in order to compare change across all participants ( $n = 63$ ) from immediate pretreatment (= 0) to posttreatment (= 1) (i.e., baseline to 3-month for immediate participants and 3-month to 6-month for waitlist participants). Pooled analyses take advantage of the fact that all participants ultimately received the intervention and are comparable to pre-post intervention comparisons in uncontrolled trials with the exception that the half of the participants in a waitlist controlled trial experienced the effects of waiting before receiving the intervention. Pooled analyses are particularly useful in waitlist controlled trials when the number of participants in each condition is relatively small. Finally, we limited analyses to 3-month (= 0) (i.e., postintervention) and 6-month (= 1) (i.e., 3 months postintervention) follow-up assessments within the immediate intervention condition to determine maintenance or change in the effects of the intervention over time. Namely, we examined the significance of the reduction in outcomes across these two periods for the immediate intervention condition, the only condition to complete follow-up assessments. For all analyses, we first examined intervention effects on primary mental and behavioral health outcomes and then examined effects on minority stress and universal processes.

## Results

### Primary Mental and Behavioral Health Outcomes

**Condition comparisons.** Limiting analyses to baseline and 3-month assessments to examine changes in primary outcomes, we found significant condition  $\times$  time interactions, suggesting relative improvements for immediate treatment participants in alcohol use problems ( $d = 1.03$ ), depressive symptoms as measured with the ODSIS ( $d = 0.55$ ), sexual compulsivity ( $d = 0.76$ ), condom use self-efficacy ( $d = 0.93$ ), and past-90-days condomless anal sex with casual partners ( $d = 0.59$ ), and marginally significant improvements in anxiety ( $d = 0.47$ ) and past-90-day heavy drinking day ( $d = 0.32$ ) compared to waitlist (see Table 2). However, no

significant condition  $\times$  time effects were found for depressive symptoms as measured with the CESD. Overall, effect sizes for primary outcomes were medium-to-large (mean  $d = 0.63$ ) and in the expected direction.

**Clinical significance.** To examine clinical significance, we modeled the reduction in the proportion of participants meeting or exceeding established clinical cutoffs from baseline to 3-month assessment on relevant outcomes. Significant condition  $\times$  time interactions revealed stronger decreases in the proportion of immediate versus waitlist participants who continued to exceed the cutoff at 3 months on the CESD (90.6% to 49.2% for immediate, 77.4% to 72.4% for waitlist,  $p = .01$ ), AUDIT (65.6% to 34.5% for immediate, 58.5% to 67.6% for waitlist,  $p = .004$ ), and Sexual Compulsivity Scale (50.0% to 22.3% for immediate, 32.2% to 36.5% for waitlist,  $p = .04$ ). No significant interaction effect was found for the ODSIS or OASIS.

**Pooled analyses.** Given our small sample size and limited power to find significant interaction effects, we examined simple linear pre-post treatment effects across all outcomes using data from all participants across both conditions. In these pooled analyses limited to immediate pretreatment and immediate posttreatment assessments (see Table 2), we found that participants experienced significant reductions in all primary outcomes from immediate pretreatment to posttreatment, with the exception of past-90-day heavy drinking days, which was marginally statistically significant. Effect sizes were generally large (mean  $d = 1.10$ ).

**Follow-up assessment.** For immediate treatment participants, the 6-month assessment served as a 3-month posttreatment follow-up allowing us to assess the persistence of or change in effects over time. As can be seen when comparing posttreatment and follow-up scores for the immediate condition in Tables 2, 3, and 4, treatment effects were generally maintained at follow-up, as there were few significant differences between posttreatment and follow-up. However, sexual compulsivity significantly increased by an estimated 2.11 points (95% CI = 0.32, 3.90;  $p < .05$ ), but this increase was below both pretreatment and clinical levels.

### Minority Stress and Universal Processes

No significant condition  $\times$  time interaction effects were found for cognitive, affective, and behavioral minority stress processes or for universal processes (Tables 3 and 4), suggesting that receiving treatment did not have a differential impact on these processes compared to waitlist. All effect sizes for comparative reductions in minority stress and universal processes were small (mean  $d = 0.26$ ) and in the expected direction. However, pooled analyses showed that all participants experienced reductions in all minority stress processes and universal processes from immediate pretreatment to posttreatment with each of these reductions being statistically significant except for sexual orientation concealment, which was not significant, and emotion dysregulation, which was marginally significant. Pre-post intervention effect sizes for minority stress processes (mean  $d = 0.81$ ) and universal processes (mean  $d = 0.76$ ) were generally large. As can be seen when comparing posttreatment and follow-up scores for the immediate condition in Tables 2 through 4, treatment effects were generally maintained at follow-up, with rumination scores continuing to significantly decrease



Table 2  
Condition and Time Comparisons for Primary Mental and Behavioral Health Outcomes

Variable	Immediate intervention (n = 32)		Waitlist control (n = 31)		Condition × time <sup>a</sup>		Pooled data <sup>b</sup> (n = 63)		Pre vs. post	
	Mean	SE	Mean	SE	Est.	95% CI	Mean	SE	Est.	95% CI
<b>CESD</b>										
3-month pretreatment	—	—	25.90	1.85	-4.74	-11.18, 1.70			-6.56***	-9.93, -3.19
Immediate pretreatment	27.69	1.83	23.19	2.14			14.40	1.76		
Posttreatment	19.83	2.05	18.41	2.03			9.5	3.1		
3-month follow-up	15.86	1.99	—	—						
<b>ODSIS</b>										
3-month pretreatment	—	—	8.10	0.77	-2.43*	-4.90, 0.04			-3.06***	-4.36, -1.75
Immediate pretreatment	8.16	0.76	7.08	0.88			7.56	0.60		
Posttreatment	4.43	0.85	4.70	0.84			4.51	0.62		
3-month follow-up	4.52	0.83	—	—						
<b>OASIS</b>										
3-month pretreatment	—	—	8.07	0.67	-2.14 <sup>‡</sup>	-4.61, 0.34			-3.04***	-4.39, -1.69
Immediate pretreatment	8.03	0.66	6.89	0.78			7.52	0.53		
Posttreatment	4.69	0.75	4.35	0.74			4.48	0.56		
3-month follow-up	4.31	0.73	—	—						
<b>AUDIT</b>										
3-month pretreatment	—	—	10.39	1.03	-3.79**	-5.94, -1.64			-3.09***	-4.00, -2.18
Immediate pretreatment	11.34	1.01	10.59	1.10			10.97	0.78		
Posttreatment	7.48	1.07	8.45	1.07			7.88	0.79		
3-month follow-up	6.92	1.05	—	—						
<b>Sexual compulsivity</b>										
3-month pre-treatment	—	—	20.84	1.27	-5.09**	-8.78, -1.40			-4.40***	-6.34, -2.46
Immediate pre-treatment	23.47	1.25	19.86	1.41			21.91	0.96		
Post-treatment	16.88	1.36	17.97	1.36			17.51	0.99		
3-month follow-up	18.54	1.33	—	—						
<b>Condom use self-efficacy</b>										
3-month pretreatment	—	—	40.32	2.32	10.08**	3.86, 16.30			7.64**	3.26, 12.03
Immediate pretreatment	33.72	2.29	44.07	2.65			38.00	1.81		
Posttreatment	47.77	2.55	44.07	2.53			45.64	1.89		
3-month follow-up	46.81	2.48	—	—						
<b># Days of heavy drinking (90 Day)</b>										
3-month pretreatment	—	—	14.26	2.43	-0.32 <sup>‡</sup>	-0.71, 0.07			-0.17 <sup>‡</sup>	-0.36, 0.29
Immediate pretreatment	16.66	2.39	15.30	2.63			16.24	1.93		
Posttreatment	12.81	2.55	14.88	2.56			13.86	1.97		
3-month follow-up	12.01	2.51	—	—						
<b># Condomless anal sex acts with casual partners (90 Day)</b>										
3-month pretreatment	—	—	5.84	1.24	-1.09**	-1.80, -0.37			-0.65*	-1.22, -0.09
Immediate pretreatment	4.53	1.22	7.38	1.43			5.90	1.03		
Posttreatment	1.80	1.43	3.74	1.38			3.07	1.11		
3-month follow-up	1.82	1.35	—	—						

Note. Est. = estimate; CI = confidence interval; CESD = Center for Epidemiologic Studies Depression Scale; OASIS = Overall Anxiety Severity and Impairment Scale; ODSIS = Overall Depression Severity and Impairment Scale; AUDIT = Alcohol Use Disorders Identification Test.

<sup>a</sup> Condition × time effects compare immediate pretreatment and posttreatment measures for the immediate intervention group against 3-month pretreatment and immediate pretreatment measures for the waitlist control group. <sup>b</sup> Pooled data compares immediate pretreatment against posttreatment scores for all participants.

<sup>‡</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

from posttreatment by an estimated 6.44 points (95% CI: 1.47, 11.41;  $p < .05$ ).

### Discussion

Compared to a waitlist condition, participation in ESTEEM significantly reduced depressive symptoms, alcohol use problems, sexual compulsivity, and condomless anal sex with casual partners, and improved condom use self-efficacy. Further, depressive symptoms, alcohol use, and sexual compulsivity showed clinically significant improvement using established

clinical cutoffs. ESTEEM yielded marginally significantly greater improvements than waitlist in anxiety symptoms and past-90-day heavy drinking. A relatively brief psychological treatment such as ESTEEM, capable of simultaneously addressing young gay and bisexual men's interrelated health threats, represents a promising public health tool given the life course persistence and emotional and financial cost of male sexual orientation health disparities as well as the societal consequences of stigma more generally (Hatzenbuehler, Phelan, & Link, 2013).

Table 3  
Group and Time Comparisons for Minority Stress Processes

Variable	Immediate intervention (n = 32)		Waitlist control (n = 31)		Condition × time <sup>a</sup>		Pooled data <sup>b</sup> (n = 63)		Pre vs. post	
	Mean	SE	Mean	SE	Est.	95% CI	Mean	SE	Est.	95% CI
Gay-related stress					-0.17	-0.42, 0.08			-0.18**	-0.29, -0.06
3-month pretreatment	—	—	1.71	0.09						
Immediate pretreatment	1.72	0.09	1.65	0.10			1.69	0.07		
Posttreatment	1.52	0.10	1.55	0.10			1.51	0.07		
3-month follow-up	1.68	0.10	—	—						
Rejection sensitivity					-1.80	-5.84, 2.24			-5.25***	-6.98, -3.52
3-month pretreatment	—	—	17.59	1.43						
Immediate pretreatment	16.22	1.40	13.18	1.58			15.03	1.08		
Posttreatment	9.97	1.53	9.37	1.52			9.78	1.10		
3-month follow-up	10.07	1.49	—	—						
Internalized homophobia					0.09	-0.23, 0.41			-0.18*	-0.35, -0.01
3-month pretreatment	—	—	1.84	0.12						
Immediate pretreatment	1.74	0.12	1.56	0.13			1.62	0.08		
Posttreatment	1.55	0.13	1.45	0.13			1.45	0.09		
3-month follow-up	1.58	0.12	—	—						
Concealment					0.16	-0.09, -0.42			-0.09	-0.20, 0.03
3-month pretreatment	—	—	1.72	0.11						
Immediate pretreatment	1.53	0.11	1.47	0.12			1.48	0.08		
Posttreatment	1.43	0.12	1.39	0.12			1.40	0.08		
3-month follow-up	1.43	0.11	—	—						

Note. Est. = estimate; CI = confidence interval.

<sup>a</sup> Condition × time effects compare immediate pretreatment and posttreatment measures for the immediate intervention group against 3-month pretreatment and immediate pretreatment measures for the waitlist control group. <sup>b</sup> Pooled data compares immediate pretreatment against posttreatment scores for all participants.

<sup>‡</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

Several strengths of ESTEEM include its evidence-based cognitive-behavioral platform, adaptations based on empirically supported components of minority stress theory and close consultation with mental health providers and affected community members, and its LGB-affirmative stance that promotes personal agency and resilience (Pachankis, 2014). Practical strengths include being based on a transdiagnostic platform (Barlow et al., 2010), which circumvents the need for training providers in multiple treatment packages, and providing a set of modules that target underlying risk factors, which have generalized effects across symptom presentations.

While ESTEEM improved most of the primary outcomes under investigation, compared to waitlist it did not significantly reduce the cognitive, affective, or behavioral minority stress processes or universal mental health risk factors through which ESTEEM was hypothesized to work. However, treatment effects for all minority stress processes and universal risk factors were in the expected direction, and pooled comparisons showed significant pre–post treatment improvement for all minority stress and universal processes except concealment and emotion dysregulation. Effect sizes uncovered in this preliminary study suggest that statistically significant effects would be found for all outcomes, minority stress process, and universal risk factors, except internalized homophobia, emotion dysregulation, and assertiveness, in a replicated study with approximately twice as many participants. In sum, while this initial test shows preliminary efficacy for significantly and meaningfully improving young gay and bisexual men’s syndemic health conditions, larger sample sizes would be needed to detect significant changes in the minority stress and universal processes that are hy-

pothesized to underlie these conditions (Hatzenbuehler, 2009; Meyer, 2003).

The effects of ESTEEM on mental, behavioral, and sexual health can be understood in comparison to the effects found in other waitlist controlled trials of CBT interventions. For example, the effect of ESTEEM on depression is very similar to the average effect found across other waitlist controlled trials of CBT (Hofmann & Smits, 2008), but smaller than the effect found in the waitlist controlled trial of the nonadapted Unified Protocol. Whereas the Unified Protocol trial enrolled only participants with a clinical diagnosis, the present trial selected participants based on symptomatology; thus, effect sizes in tests of the Unified Protocol would be expected to be larger. The effect of ESTEEM on anxiety is somewhat lower than those found across other waitlist controlled trials of CBT interventions (Hofmann & Smits, 2008), although similar to the effects found in a waitlist controlled trial of the nonadapted Unified Protocol (Farchione et al., 2012). The effect of ESTEEM on reduction in alcohol use and alcohol use problems exceeds the average effect found across waitlist controlled trials of motivational interviewing (Burke, Arkowitz, & Menchola, 2003) and CBT (Magill & Ray, 2009). Finally, the effect of ESTEEM on reductions in condomless anal sex is very closely in line with the average effects found in HIV risk reduction behavioral interventions (Herbst et al., 2005). Thus, overall, the effects of ESTEEM are comparable to those found in waitlist controlled trials of other CBT interventions, while a particular benefit of ESTEEM compared to standard CBT interventions is its ability to impact the full spectrum of these outcomes simultaneously.

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Table 4  
Condition and Time Comparisons for Universal Cognitive, Affective, and Behavioral Processes

Variable	Immediate intervention (n = 32)		Waitlist control (n = 31)		Condition × time <sup>a</sup>		Pooled data <sup>b</sup> (n = 63)		Pre vs. post	
	Mean	SE	Mean	SE	Est.	95% CI	Mean	SE	Est.	95% CI
Rumination					-4.04	-11.19, 3.09			-5.41**	-9.25, -1.56
3-month pretreatment	—	—	57.71	2.49						
Immediate pretreatment	65.75	2.39	53.50	2.72			60.60	2.00		
Posttreatment	56.95	2.62	52.70	2.61			55.20	2.06		
3-month follow-up	50.15	2.56	—	—						
Emotion dysregulation					3.06	-9.12, 15.25			-6.79 <sup>‡</sup>	-13.73, 0.16
3-month pretreatment	—	—	101.26	4.24						
Immediate pretreatment	103.31	4.17	85.20	4.83			94.99	3.25		
Posttreatment	90.45	4.65	85.74	4.61			88.20	3.38		
3-month follow-up	88.76	4.52	—	—						
Social support					0.37	-0.12, 0.86			0.37**	0.12, 0.62
3-month pretreatment	—	—	4.56	0.25						
Immediate pretreatment	4.14	0.24	4.81	0.27			4.44	0.19		
Posttreatment	4.74	0.26	4.84	0.26			4.81	0.19		
3-month follow-up	4.88	0.25	—	—						
Assertiveness					2.40	-7.35, 12.14			7.48**	1.98, 12.98
3-month pretreatment	—	—	-0.90	5.04						
Immediate pretreatment	-1.63	4.96	5.22	5.46			1.43	3.73		
Posttreatment	6.58	5.30	11.30	5.31			8.91	3.81		
3-month follow-up	11.32	5.21	—	—						

Note. Est. = estimate; CI = confidence interval.

<sup>a</sup> Condition × time effects compare immediate pretreatment and posttreatment measures for the immediate intervention group against 3-month pretreatment and immediate pretreatment measures for the waitlist control group. <sup>b</sup> Pooled data compares immediate pretreatment against posttreatment scores for all participants.

<sup>‡</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

Study results must also be interpreted in light of several experimental design limitations. A waitlist design controls for natural improvement over time, treatment expectancies, and reactive measurement effects, but cannot answer whether the tested treatment possesses more promise than another active treatment. Future tests of ESTEEM should employ a stronger comparison group than the waitlist condition used here. Currently, the question of whether standard cognitive-behavioral approaches work similarly across sexual orientation groups remains to be answered (Cochran, 2001; Safren, 2005). Comparing ESTEEM to a nonadapted form of cognitive-behavioral therapy, such as the nonadapted Unified Protocol, would establish whether minority stress additions improve treatment outcomes over existing treatments. Further, comparing ESTEEM with briefer, more portable stigma coping interventions, such as expressive writing (e.g., Pachankis & Goldfried, 2010), would determine the time- and cost-effectiveness of the treatment. Comparing ESTEEM to supportive counseling or other common forms of treatment would verify the benefit of ESTEEM's evidence-based approach against standard care. While our 6-month retention rate is comparable to that of other behavioral health trials with this population (e.g., Parsons, Lelutiu-Weinberger, Botsko, & Golub, 2014), our session completion rate was lower than that found in tests of the nonadapted Unified Protocol among treatment-seeking adults in clinical settings (e.g., Farchione et al., 2012). Future tests of ESTEEM conducted among treatment-seeking samples in clinical settings might find an increased session completion rate. Given that our intent-to-treat analyses examined intervention effects across all randomized participants, including those who did not complete the treatment, our results may under-

estimate the effect of the intervention for those who receive its entirety. While participants completed survey measures by private computer and were randomized to condition only after completion of the baseline assessment, interviewers who administered the timeline follow-back during subsequent assessment appointments were not blind to study condition. Although interviewers were not formally made aware of study hypotheses, and although all survey measures would be unaffected given that they were completed on a private computer, future trials should employ blind reviewers at all assessment points. Finally, given that the present study employed only one fidelity rater, future studies ought to employ at least two raters to provide independent, reliable assessments of fidelity to intervention materials.

As effects of the nonadapted Unified Protocol on anxiety and depression have been shown to persist for at least 18 months posttreatment (Bullis, Fortune, Farchione, & Barlow, 2014), future tests of ESTEEM should include more frequent follow-up assessments over a longer period of time. Greater statistical power and more follow-up periods would also allow future researchers to determine whether changes in minority stress and universal processes account for changes in outcomes as predicted by minority stress theory (Meyer, 2003; Hatzenbuehler, 2009). Uncovering such treatment mechanisms would suggest the most promising psychosocial processes to target in future treatment approaches. Finally, examining the efficacy of ESTEEM as specifically adapted to other diverse sexual orientation groups, including lesbian and bisexual women and transgender individuals, seeking treatment in diverse settings (e.g., community clinics) and communities (e.g., rural), would extend the promise of this intervention

to the full spectrum of sexuality and gender diversity affected by minority stress processes (Lehavot & Simoni, 2011; Operario, Yang, Reisner, Iwamoto, & Nemoto, 2014).

While several aspects of our assessment approach represent strengths, including use of an interviewer-based timeline follow-back assessment of risk behavior, our outcome measures were limited to nondiagnostic self-report scales. A potential explanation for the relatively weak effects found for minority stress processes and universal risk factors compared to the more robust effects found for primary outcome measures may be due to the fact that our self-report measures of the former constructs often assessed these processes as general or past-year traits and tendencies, rather than as modifiable cognitive, affective, or behavioral patterns across the 3-month span of our assessment periods. Additionally, some of the minority stress measurements, such as sexual orientation concealment and internalized homophobia, may have suffered from range restriction given the fact that the young gay and bisexual men in this study were relatively open and comfortable with their sexual orientation, living in an urban center, and mostly recruited through gay-specific venues. While we selected participants who were experiencing mental health problems and sexual risk behaviors, we did not select participants who were necessarily experiencing minority stress. Alternately, it is possible that modifying minority stress processes requires more intensive intervention efforts, more time to manifest, and/or concomitant reductions in the societal conditions (e.g., discriminatory laws, policies, community attitudes) that drive minority stress at the structural level and have been shown to interfere with the health benefit of behavioral interventions delivered to other stigmatized groups (Reid, Dovidio, Ballester, & Johnson, 2014). Future tests of ESTEEM might measure minority stress mediators as momentary or daily fluctuating phenomena (e.g., Eldahan et al., 2015), as physiological reactivity in response to an acute stressor (e.g., Juster et al., 2015), or as a combination of physiological reactivity contingent on structural drivers of minority stress (e.g., Hatzenbuehler & McLaughlin, 2014).

The maximum number of sessions in this study was 10, whereas other tests of the Unified Protocol typically allow substantially more (e.g., 18; Farchione et al., 2012). While we initially believed that 10 sessions would optimize the balance between instilling key skills against constrained provider resources, it is possible that allowing additional sessions would yield even stronger effects. The results found here suggest that an increased number of sessions might ultimately prove cost-effective given the substantial range of mental and behavioral outcomes impacted in this preliminary trial. In fact, most brief interventions for gay and bisexual men are designed to target only one problem and typically only show effects specific to those problems (e.g., Parsons et al., 2014). Examining whether the transdiagnostic approach of ESTEEM might synergistically enhance effects across outcomes to offset the greater cost of more sessions would represent an important future test. Given the ability of homework to enhance the effect of CBT interventions (Kazantzis, Deane, & Ronan, 2000) and the importance of homework to ESTEEM, future tests of ESTEEM should track the amount of homework completed as a potential treatment moderator.

ESTEEM rests on the premise that minority stress processes hamper young gay and bisexual men's mental and physical health and that minority stress coping represents a set of cognitive, affective, and behavior skills that can be learned in an LGB-

affirmative therapy context (Eubanks-Carter, Burckell, & Goldfried, 2005; Pachankis & Goldfried, 2004). Structural forms of sexual minority stigma have rapidly improved in recent years in the United States, and in some cases globally (Pew Research Center, 2013); continuing to reduce structural stigma to eliminate sexual orientation health disparities represents an essential public health goal. However, according to minority stress theory, until structural stigma is completely eradicated, gay and bisexual men will continue to disproportionately experience mental health problems and associated psychosocial conditions relative to heterosexuals. Therefore, interventions that promote health through teaching stigma-coping represent an equally important use of public health resources. Indeed, one means of promoting structural change may be to empower marginalized individuals to establish that change (Cook, Purdie-Vaughns, Meyer, & Busch, 2014). The study presented here suggests that ESTEEM represents a promising means of empowering young gay and bisexual men to navigate stigma and of empowering the mental health treatment community to provide evidence-based, LGB-affirmative clinical services.

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