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What is This?

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Abstract

The authors conducted a three-phase, mixed-methods study to develop a self-report measure assessing the unique aspects of minority stress for lesbian, gay, bisexual, and transgender adults. The Daily Heterosexist Experiences Questionnaire has 50 items and nine subscales with acceptable internal reliability, and construct and concurrent validity. Mean sexual orientation and gender differences were found.

Keywords

diversity, exploratory factor analysis, measurement

Despite recent advances in societal acceptance of sexual minorities in the United States, negative social attitudes and behaviors toward lesbian, gay, bisexual, and transgender (LGBT) people are still widespread. Similar to other marginalized groups (e.g., racial/ethnic minorities), LGBT people experience discrimination that ranges from individual (e.g., verbal harassment) to institutional (e.g., lack of protection from employment discrimination). The social and cultural oppression experienced by LGBT populations is referred to as *heterosexism*, and its impact on individual LGBT people has been conceptualized as *minority stress*. Recent theory and research with LGBT populations explored the role of heterosexism and minority stress among LGBT populations (e.g., Hatzenbuehler, Nolen-Hoeksema, & Erikson, 2008; Lewis, Derlega, Berndt, Morris, & Rose, 2001; Mays & Cochran, 2001; Meyer, 2003; Szymanski, 2009).

Conceptualizations of LGBT Minority Stress

Contemporary discourse on LGBT minority stress can be traced to Meyer's (1995, 2003) seminal work in this area. Meyer's minority stress theory is an extension of social stress theory (Crocker, Major, & Steele, 1998; Link & Phelan, 2001), which proposed that conditions of the social environment (e.g., discriminatory remarks, social exclusion) create stress for individuals that can adversely affect health and well-being. Minority stress is

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described as a specific form of social stress in which members of stigmatized social groups are exposed to unique stressors associated with their social status and identity. As conceptualized by Meyer (1995, 2003), LGBT minority stress is composed of four components. The first component includes prejudice events such as discrimination and violence, which are theorized to be the most distal to the self and the most objective (i.e., more clearly having occurred or not occurred). The other three components, internalized homophobia, expectations of rejection, and stress associated with concealment, are more proximal to the self and thus more subjective.

Minority stress experienced by LGBT people has similarities to stress experienced by members of other oppressed groups. For example, similar to ethnic minorities and women, LGBT people are subject to a range of negative discriminatory experiences, but individuals can vary in the extent to which they perceive these experiences as stressful (Harper & Schneider, 2003; Landrine & Klonoff, 1996). Additionally, as occurs with other marginalized populations, LGBT people may psychologically internalize negative social attitudes toward their group, coming to themselves believe in these negative messages (Szymanski, Kashubeck-West, & Meyer, 2008). Another similarity to other groups is that LGBT individuals can become psychologically distressed by expectations of discrimination, even in the absence of such events actually occurring (Hatzenbuehler et al., 2008; Meyer, 1995). Like other minorities, LGBT people are likely to hear about heterosexist events occurring in the lives of other people and may incur vicarious stress related to such instances (e.g., Noelle, 2002).

However, LGBT minority stress also has unique characteristics. Unlike members of other stigmatized groups, LGBT people more often have the option of concealing their sexual identity. Thus, individuals who are more disclosing of their orientation may be subject to external stressors in the form of people's anti-LGBT behavior, whereas individuals who conceal their orientation may be subject to the more internal stressors associated with

concealment (DiPlacido, 1998; Ragins, Singh, & Cornwell, 2007; Waldo, 1999). For example, one aspect of concealment pertains to gender expression, which can serve as a visible marker of LGBT identity. LGBT individuals who are gender nonconforming, such as masculine-appearing lesbian and bisexual women, may encounter more external discrimination because of enhanced visibility as sexual minorities (Levitt & Horne, 2005). On the other hand, individuals with more socially conventional gender expression may be less likely to encounter discrimination from other people, yet may harbor more negative internalized beliefs about their sexual orientation (Hiestand, Levitt, & Horne, 2005; Lehavot & Simoni, 2011).

Importance of LGBT Minority Stress

LGBT minority stress has emerged as an important focus of study because researchers have linked it to negative health outcomes. Most studies focus on specific types of LGBT minority stress (e.g., internalized homonegativity) rather than the full range, but they nevertheless find that minority stress is associated with poorer quality of life and increased risk for psychiatric disorders (Mays & Cochran, 2001), psychological distress (Swim, Johnston, & Pearson, 2009; Szymanski, 2009; Vincke & Van Heeringen, 2002), substance abuse (Nawyn, Richman, Rospenda, & Hughes, 2000), and other health-risk behaviors (Hamilton & Mahalik, 2009). This research is particularly important, given the growing body of literature documenting disparities in mental and physical health between LGBT and non-LGBT populations (Conron, Mimiaga, & Landers, 2010; Diamant, Wold, Spritzer, & Gelberg, 2000; King et al., 2008). Overall, findings to date suggest that research may benefit from looking at two aspects of LGBT minority stress. One is the extent to which it may explain between-group health disparities. The other is helping account for within-group variation in health outcomes among LGBT people (Meyer, 2003).

Measurement of LGBT Minority Stress

Although minority stress theory is promising in terms of understanding and ameliorating health disparities faced by LGBT people, there is need for further measurement tool development. Specifically lacking is a comprehensive measurement instrument that combines four key characteristics: (1) coverage across the range of types of stresses experienced by LGBT people, (2) identification of and ability to distinguish between whether a stress is experienced and how much subjective distress it caused, (3) assessment of a clearly specified time frame, and (4) usability across LGBT subpopulations, such as people of different genders, sexual and gender identities, race/ethnicities, and ages.

No currently existing measure meets all of these criteria. For example, many existing instruments do not include the full range of possible experiences, such as across Meyer's (1995, 2003) domains. The reason is that many measures were intended to focus solely on one or a small subset of such experiences. For example, discrimination and harassment measures have included the Gay-related Stressful Life Events Scale (Rosario, Hunter, & Gwadz, 1993; Rosario, Schrimshaw, Hunter, & Gwadz, 2002), the Heterosexist Harassment, Rejection and Discrimination Scale (Szymanski, 2009), and the Gay Bashing Scale (Zamboni & Crawford, 2007). Another example is that measures have been developed for internalized homonegativity, including the Nungesser Homosexuality Attitudes Inventory and Martin and Dean's nine-item Internalized Homophobia Scale (reviewed in Szymanski et al., 2008).

One exception is a 70-item self-report questionnaire developed by Lewis et al. (2001), in which LGB individuals rated the degree of stress caused by a series of LGB-related stressful events. Ten subscales comprise this measure, including stressors related to visibility/outness, family reactions to same-sex relationships, work and general discrimination/harassment, lack of societal rights and visibility of LGB issues, violence, fear of HIV/AIDS, and sexual orientation

conflict/ambivalent feelings toward one's sexual identity. Although this scale includes three of the four major components (discrimination/violence, stress associated with concealment, internalized homonegativity), it does not distinguish between current and lifetime stressors, nor does it distinguish between the presence of events versus the associated subjective stress. In addition, this measure was developed on predominantly White lesbian women ($N = 15$) and gay men ($N = 18$); underrepresentation of ethnic minority and transgender populations may have limited the range of included minority stressors.

Another example of a more comprehensive instrument is Hatzenbuehler et al.'s (2008) study on bereaved gay men, which included measurement of discrimination, internalized homophobia, and expectations of rejection. Although this measure included multiple components of minority stress and provided a clearly specified timeframe (within the past 12 months), it was geared specifically toward gay men. Additionally, the response categories assessed only the frequency of experiences and not the associated distress.

In sum, measures exist that address particular types of LGBT stress or address multiple components of LGBT minority stress but not necessarily for LGBT samples diverse in sexual identity, gender identity, and race/ethnicity. Furthermore, many measures do not include assessment of the subjective distress associated with experiencing stressors. Given these limitations, the development of a more comprehensive instrument is warranted. In doing this, it is important to recognize that since sexual minority stress is a relatively newly researched phenomenon, it is possible that current theory—and resulting measurement—does not fully capture all of its aspects. Hence, measurement development is needed that is guided by current theory but is supplemented with research methods that ensure that the range of LGBT populations and stressors are accounted for. Mixed methods—the use of both qualitative and quantitative methods—are ideal for this purpose. Specifically, qualitative interviews with members across LGBT populations can be used to generate items, which

can subsequently be administered and quantitatively tested.

The Current Study

We conducted the Rainbow Project, a three-phase, mixed-methods study of LGBT adults. The goals of the Rainbow Project were to (1) identify the range of stressors associated with LGBT status by asking LGBT people in an open-ended way to describe their experiences, (2) develop a self-report questionnaire measure based on a content analysis of participants' responses, (3) test and refine the measure using data from two quantitative surveys, (4) establish validity of the resulting measure by examining correlations between it and other measures of psychosocial adjustment, and (5) compare the measure and its subscales across gender, sexual identity, and race/ethnicity.

The Rainbow Project included a series of three planned studies to develop and test the new measure. During Study 1, we conducted qualitative focus groups and interviews to generate questionnaire items ($N = 119$). During Study 2, we pilot tested new items in a web-based national survey ($N = 900$), dropped items with poor performance, and generated new items. In Study 3, we tested the reliability and validity of the measure by administering it in a second national web-based survey ($N = 1,217$) along with measures of demographics, psychological distress, LGBT identity, and general discrimination. Because LGBT populations are somewhat hidden and difficult to reach, we used recruitment methods for all three studies that were designed to reach a broad and diverse cross section of the LGBT community.

Study 1: Item Generation and Construction of the Daily Heterosexual Experiences Questionnaire (DHEQ) Scale

For Study 1, we conducted 12 focus groups and 17 in-depth interviews with ethnically and geographically diverse LGBT adults in

Washington state. Focus groups were conducted with volunteers from the general population and were designed to generate constructs and themes. Interview participants were specifically recruited based on being leaders or activists in specific subgroups of the LGBT community. All interviews were semistructured and focused on minority stress, with open-ended questions asking participants to discuss stressors and challenges associated with being LGBT. We reviewed transcripts and generated questionnaire items directly from the participants' narratives.

Method

Participants. Between August 2004 and May 2005, we conducted 12 focus groups (M sample size = 8.4) and 17 in-depth interviews with 119 LGBT adults in Washington State. Focus group and interview samples were non-overlapping. The mean age of participants was 38.9 years ($SD = 10.7$). With regard to race/ethnicity, 9.3% identified as African American, 12.7% as Latino/Latina, 10.2% as Asian/Pacific Islander, 0.8% as American Indian, 52.5% as White, and 14.4% as biracial or multiracial. Regarding participants' gender identity, 41.2% identified as female, 44.5% as male, 2.5% as female to male transgender, 8.4% as male to female transgender, and 3.4% as other. In terms of sexual identity, 58.5% identified as lesbian or gay, 15.3% as bisexual, 14.4% as queer, 1.7% as two-spirit, and 3.4% as other.

Procedure

Recruitment. Participants were recruited from both urban (Seattle) and rural (Yakima and Eastern Washington) areas of Washington State. We distributed announcements about the study via e-mail listservs, contact with leaders and organizations within LGBT communities, advertisements placed in print media (e.g., local newspapers), and flyers distributed in areas of the largest urban area (Seattle) with high concentrations of LGBT residents. Recruitment materials described the study as focusing on the unique life experiences of LGBT adults. Additionally,

targeted advertisements were distributed to specifically recruit understudied bisexual, transgender, and ethnic minority LGBT participants, all of whom are typically underrepresented in LGBT research. These advertisements used wording that emphasized recruitment of these specific populations and were distributed electronically and in person to organizations, groups, listservs, and websites that focus on these specific populations. To further enhance the credibility of the study to these groups, the principal investigator (PI) made personal contact with numerous community leaders serving them to gain further assistance in reaching these difficult-to-recruit groups. Individuals who participated in interviews were specifically sent a recruitment letter based on being leaders or activists in subgroups of the LGBT community. All potential participants contacted the Rainbow Project office by phone and were screened via a brief telephone interview. Based on the scope and resources of the study, eligibility criteria were being self-identified as LGBT, age 18 years or older, English speaking, and a current Washington state resident.

Data collection. Focus groups and interviews were semistructured, with questions focusing on the nature and experience of particularly salient matters for LGBT individuals, such as those related to “outness” (being known to be LGBT), identity development, substance use, relationship to community, coping approaches used, and mental health. All focus groups and interviews included open-ended questions regarding the specific stressors associated with being LGBT (e.g., “What kinds of challenges have you faced as an LGBT person?” “What are some of the day to day hassles you have to deal with because of your sexual orientation?” “What are some of the less frequent things that are stressful?”) and their impact (e.g., “How have stressors specific to being an LGBT woman of color affected you?”).

Interviewers for the study included the PI and a team of individuals who self-identified as LGBT and had experience and training in research and/or social service provision with

LGBT populations. Focus groups were cofacilitated by two interviewers. For two Eastern Washington groups, one interviewer facilitated the focus group discussion, because of geographic availability. In all cases, one or both of the interviewers were demographically matched to the participants of the focus group; for example, interviewers in the men of color group were self-identified gay men of color. For the individual interviews, interviewer matching was offered to participants of color, such that participants were given the option of being interviewed by the PI (a White woman) or an individual who was also a person of color.

Participants in focus groups were assigned to specific groups according to identity and geographic location. Given that an additional goal of the larger study was to understand links between minority stress and substance use, participants were also assigned to three groups based on their specific substance use history. When participants’ screening information indicated that they were eligible for more than one group (e.g., women of color, bisexual, in recovery from substance use problem), they were given a choice as to which group they would prefer. The composition of the 10 groups held in Seattle was as follows: lesbian women ($N = 9$), gay men ($N = 8$), bisexual women and men ($N = 11$), transgender women and men ($N = 7$), lesbian and bisexual women of color ($N = 8$), gay and bisexual men of color ($N = 8$), LGBT women and men who currently use alcohol and drugs ($N = 10$), LGBT women and men in recovery from substance abuse ($N = 8$), LGBT women and men who are life-long abstainers from alcohol and drug use ($N = 5$), and LGBT women and men who are mental health and substance abuse treatment providers and who both identify as LGBT and serve LGBT communities ($N = 8$). Two additional groups were held in Yakima consisting of gay and bisexual men from Eastern Washington ($N = 11$) and lesbian and bisexual women from Eastern Washington ($N = 9$). An additional sample of individuals ($N = 17$) participated in individual, in-depth interviews to explore the study questions in greater depth. These individuals were selected either based on

being nominated by their peers as leaders or activists in various segments of LGBT communities or by reporting significant past or current substance abuse.

Analysis. Interviews were transcribed and coded in Atlas.ti 5.0 software. Two or three coders reviewed every transcript and created a general code for “stressors” identified by participants. All coders were self-identified as LGBT and had conducted at least one focus group or interview. Code discrepancies were rare, but when they occurred, they were resolved by consensus. All passages coded as “stressors” were then carefully reviewed by the PI, who generated a pool of questionnaire items using content analysis methods to review participants’ responses. Specifically, unique stressors were identified and summarized into single statements. For example, a number of participants discussed stress associated with hearing about maltreatment of other LGBT people; hence, an item was created that read “Hearing about LGBT people you know being treated unfairly.”

Results and Discussion

Consistent with Meyer’s (1995) minority stress theory and existing empirical evidence, participants reported LGBT-related stressors that were more distal (harassment, discrimination, and victimization) as well as more proximal (isolation, vicarious trauma, vigilance). For example, many participants reported stressors related to their gender expression, consistent with literature indicating that gender-nonconforming LGB people have relatively more discrimination experiences (e.g., Lehavot & Simoni, 2011; Levitt & Horne, 2005). Stressors related to family relationships, including rejection and discrimination by family of origin (D’Augelli & Hershberger, 1993; Hammelman, 1993; Koken, Bimbi, & Parsons, 2009) as well as challenges of being an LGBT parent (Bos, van Balen, van den Boom, & Sandfort, 2004; Clarke, Kitzinger, & Potter, 2004), were also noted and paralleled previous research. Some participants

also discussed HIV-related and immigration-related stressors, which may be particularly important for specific LGBT subpopulations—for example, gay/bisexual men with HIV (Lewis et al., 2001) and individuals who are not U.S. citizens. Detailed review of the transcripts and these themes resulted in the creation of 60 questionnaire items based on participants’ descriptions of LGBT-related stressors.

Study 2: Web-Based Survey Validation and Refinement of DHEQ Items

For Study 2, we conducted a national web-based anonymous survey to pilot test the 60 items generated in Study 1. The goal of Study 2 was to examine the generalizability of themes found in our qualitative research in a national sample and to further refine our questionnaire measure.

Method

Participants. For Study 2 (November 2005 to December 2005), we conducted a national, web-based, and anonymous survey of 900 LGBT adults. The mean age of participants was 34.0 years ($SD = 11.2$), with a range from 18 to 76 years. Participants reported having identified as LGBT for an average of 14.1 years ($SD = 11.2$). The gender of participants was 31.1% male, 57.3% female, 4.4% male to female transgender, 2.8% female to male transgender, and 4.0% “other” gender. Regarding participants’ sexual identity, 48.7% of respondents identified as lesbian or gay, 31.8% as bisexual, 11.8% as queer, 12% as two-spirit, and 6.4% as other. In terms of race/ethnicity, 68.8% identified as White, 7.2% as African American, 5.0% as Latino/Latina, 1.4% as Native American/American Indian, 4.0% as Asian/Pacific Islander, and 11.9% as multiracial. About half (51.3%) had at least a college degree, and 35.2% had a graduate or professional degree. Mean household income was in the \$40,000 to \$59,000 per year range.

Procedure

Recruitment. Recruitment involved a combination of snowball and targeted sampling methods conducted via the Internet. We sent announcements electronically throughout the United States to LGBT e-mail lists, websites, groups, organizations, and clubs. Extensive web-based research allowed us to identify venues, including yahoo groups and LGBT community centers that provided access to bisexual, transgender, and ethnic minority LGBT participants. Additionally, we asked participants to forward information about the study to others who were eligible and might be interested in participation.

Potential participants were directed to the study website, where the information statement explained the details of the study, including the criteria necessary to participate (self-identification as LGBT, age 18 years or older) and its purpose (to “understand how the unique experiences of LGBT people affect their health and well-being” as well as to “refine our survey questions about experiences of LGBT adults.”). After the information statement, participants completed an online questionnaire using Catalyst data collection software at the University of Washington. On completing the questionnaire, all participants received a listing of national social support and mental health resources.

Measures. For each of the 60 DHEQ items generated from Study 1, participants responded to “How much has this problem distressed or bothered you during the past 12 months?” using the following response categories 0 = *did not happen/not applicable to me*, 1 = *it happened, and it bothered me NOT AT ALL*, 2 = *it happened, and it bothered me A LITTLE BIT*, 3 = *it happened, and it bothered me MODERATELY*, 4 = *it happened, and it bothered me QUITE A BIT*, 5 = *it happened, and it bothered me EXTREMELY*. The time frame of 12 months was given to add specificity to participants’ responses. Additionally, an open-ended item at the end of the questionnaire asked participants to list any additional stressors that we did not assess.

The response categories were designed to allow flexibility in how to use the items. Specifically, there are two options when using them to compute subscale scores. One is to create distress subscale scores by computing the mean of the responses for that subscale (in effect, representing how much the participant is bothered by these experiences). The other is to compute the number of experiences the person reports for that subscale (hence, a count of how many of the items in the subscale a participant has experienced). The validity analyses reported here used the first approach (distress subscale scores that were the mean of the items) because of a greater range of scores; however, similar results were replicated using the alternative approach—the count of items.

Analysis strategy. We used exploratory factor analysis (EFA) to identify factors and the items loading on them and to identify poorly performing items (e.g., those with low loadings on all factors or cross-loading on two or more factors). We conducted the EFA using principal factors extraction based on the correlation matrix, using SPSS Version 15.0. We also performed parallel analysis with 1,000 replications to help us identify the number of factors to extract. Parallel analysis is a recommended technique for identifying the optimal number of factors to rotate (Thompson & Daniel, 1996). It involves generating a random data matrix with the characteristics of the dataset to be analyzed (e.g., number of subjects and items). The EFA is conducted on both the actual and random data sets. Pairs of eigenvalues are compared across the data sets, and the number of factors to be extracted is the number in the real data set that exceeds the associated values in the randomly generated data. After using these procedures to determine the number of factors to extract, we conducted principal factors extraction based on the correlation matrix. We used promax rotation, which maximizes the simplicity of the factor structure while allowing intercorrelations between factors (Tabachnick & Fidell, 2007). We used this oblique rotation approach based on our a priori theoretically based

assumption that the factors identified might have some intercorrelations. In this situation, an orthogonal rotation—which restricts factors to be uncorrelated—could result in a misleading solution (Preacher & MacCallum, 2003). Following these analyses, items with poor performance were dropped and new items were generated for use in Study 3 based on participants' responses to the open-ended item regarding stressors.

Results and Discussion

Initial eigenvalues (range 1.42–10.55) and the parallel analysis suggested that a 10-factor solution best fit the data. These 10 factors represented a range of minority stressors consistent with the existing literature documenting stressors experienced by LGBT individuals: (1) discrimination and (2) harassment (Lewis et al., 2001; Rosario et al., 1993, 2002; Szymanski, 2009); (3) vigilance regarding potential anti-LGBT attitudes and behaviors (Hatzenbuehler et al., 2008; Meyer, 1995); (4) isolation/lack of support (Grossman, D'Augelli, & O'Connell, 2001; Hetrick & Martin, 1987); (5) vicarious trauma, for example, the death of Matthew Shephard (Noelle, 2002); (6) family problems (D'Augelli & Hershberger, 1993; Hammelman, 1993; Koken et al., 2009; Nel, Rich, & Joubert, 2004); (7) stress associated with disclosure (DiPlacido, 1998; Waldo, 1999); (8) gender expression (Lehavot & Simoni, 2011; Levitt & Horne, 2005); (9) parenting (Bos et al., 2004); and (10) HIV/AIDS (Lewis et al., 2001).

We reviewed these results looking for items that had low loadings on all factors (<.40) or cross-loaded (loaded at .40 or greater on more than one scale). Although strict and generally accepted criteria do not exist, we saw these as reasonable cutoffs in general use and in line with recommendations from others (e.g., Costello & Osborne, 2005; Tabachnick & Fidell, 2007). After reviewing these results, we dropped 5 items that cross-loaded and 11 with low factor loadings. Additionally, we removed one whose wording was somewhat redundant with another item. Accordingly, a

total of 43 items were retained. The percentage of respondents reporting that they were bothered by each stressor at least a little bit (e.g., having a score of 2 or more) ranged from 10% to 93%. This suggested that the items generated in Study 1 were applicable for the larger sample of LGBT participants in Study 2, given that at least some participants endorsed these items. In addition to these findings, a total of 40 new items were generated, based on participants' responses to the open-ended question at the end of the survey, resulting in 83 items for the DHEQ to be tested in Study 3.

Study 3: Web-Based Final Survey Development of the DHEQ Scale

The third study was a web-based survey to test the pool of 83 DHEQ items resulting from Study 2 and make final determination of items to retain. We then examined how the newly developed measure was associated with demographic variables, other established measures of LGBT identity, general perceived discrimination, and measures of psychosocial adjustment.

Method

Participants. In all, 1,217 participants completed a web-based national survey from May 2006 to March 2007. The mean age of participants was 36.6 years ($SD = 11.8$), with a range from 18 to 74 years. Participants reported having identified as LGBT for an average of 16.3 years ($SD = 12.0$). The gender of participants was 32.4% male, 51.4% female, 5.5% male to female transgender, 3.0% female to male transgender, 3.7% "genderqueer," and 4.0% "other" gender. Participants reported their sexual identity as 26.0% gay, 31.0% lesbian, 22.0% bisexual, 10.4% queer, 1.9% two-spirit, and 8.7% "other" sexual identity. In terms of race/ethnicity, 5.4% were African American, 5.4% Asian American, 5.7% Latina/Latino, 66.7% White, 10.1% multiracial, and

6.4% other. With respect to education level, 73% of participants had at least a college degree, and 37% had a graduate or professional degree. Mean household income was in the \$60,000 to \$79,000 per year range. Participants varied along the continuum of being out of the closet: A trichotomized version of the outness scale described below showed that 21.5%, 57.1%, and 21.4% reported low, medium, and high levels of being out, respectively.

Procedures

Recruitment. Recruitment, screening, consent, and survey procedures for Study 3 were identical to those described above for Study 2. Questionnaire completers could choose to enter a lottery to win one of three \$100 prizes.

Measures

DHEQ items. The questionnaire contained the 83 items identified in Study 2. Question stems and response categories were the same as described above for Study 2.

Demographics. Standard demographic questions assessed race/ethnicity, gender identity, sexual identity, education, income, and age.

Psychosocial adjustment. Depression was assessed using the 10-item Center for Epidemiological Studies Depression Scale (Andresen, Malmgren, Carter, & Patrick, 1994). For the 10 items in this scale, participants chose one of the following response categories: 1 (*rarely or none of the time, less than 1 day*), 2 (*some or little of the time, 1–2 days*), 3 (*occasionally/moderate amount, 3–4 days*), or 4 (*most/all of the time, 5–7 days*). Cronbach's alpha was .64. Anxiety was measured using the anxiety scale of the Patient Health Questionnaire–Anxiety (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007); the response format was as follows: 1 (*not bothered*), 2 (*bothered a little*), or 3 (*bothered a lot*). Cronbach's alpha was .86. PTSD symptoms were measured with the PTSD Checklist–Civilian Version (Weathers, Litz, Herman, Huska, & Keane, 1993); participants were able to select from one of the following options: 1 (*not at all*), 2 (*A little bit*), 3 (*moderately*), 4 (*quite a*

bit), or 5 (*extremely*). Cronbach's alpha was .95. We used the Perceived Stress Scale–Short Form (Cohen, Kamarck, & Mermelstein, 1983) to measure perceived stress; the response format was as follows: 0 (*never*), 1 (*almost never*), 2 (*sometimes*), 3 (*fairly often*), and 4 (*very often*). Cronbach's alpha was .84.

The Outness Inventory (Mohr & Fassinger, 2000) measured the extent to which participants' sexual orientation was known by others in their lives. The seven response options were the following: 1 (*person definitely does NOT know about your sexual orientation status*), 2 (*person might know about your sexual orientation status, but it is NEVER talked about*), 3 (*person probably knows about your sexual orientation status, but it is NEVER talked about*), 4 (*person probably knows about your sexual orientation status, but it is RARELY talked about*), 5 (*person definitely knows about your sexual orientation status, but it is RARELY talked about*), 6 (*person definitely knows about your sexual orientation status, and it is SOMETIMES talked about*), or 7 (*person definitely knows about your sexual orientation status, and it is OPENLY talked about*). Cronbach's alpha for our sample was .81. Discrimination was assessed with two items: "How much homophobia interfered with your ability to live a fulfilling and productive life?" and "How different do you think your life would be if you had not had to deal with the challenges of being LGBT?" Respondents could answer with one of the four options: 1 (*not at all*), 2 (*a little bit*), 3 (*a medium amount*), or 4 (*a lot*).

Analysis Strategy. We conducted EFA using the same procedures described in Study 2 (principal factors extraction using the correlation matrix, promax rotation, and parallel analysis with 1,000 replications). We examined factors, and eliminated items. Our goal was to produce a final instrument of reasonable overall size but with a sufficient number of items on each subscale. Guiding this, we established the criteria that we wanted no subscale to have fewer than four items (enough items to be reasonably reliable) or to have greater than six items (adding to the overall length without

providing added value). We chose a loading cutoff of .40 to guide the pruning of items, as this level represents above adequate associations with the respective factor (Costello & Osborne, 2005; Tabachnick & Fidell, 2007). For some factors, we found dropping items that loaded below this cutoff allowed us to meet these goals (at least four and no more than six items). On others, there were more than six items loading greater than .40, and so we dropped those with the lowest loadings to keep six items. We used Cronbach's alpha to assess the internal reliability of scores based on each factor's items. To examine validity, LGBT stress subscales were created and correlated with the psychosocial adjustment measures, hypothesizing that greater stress would be associated with poorer adjustment. Finally, for descriptive purposes we examined the extent to which subscale scores differed across diverse gender, sexual, and racial/ethnic identities.

Results

Exploratory Factor Analysis. A total of 852 individuals had complete data across items and were included. Individuals with missing data generally stopped filling out the questionnaire after the demographics section, likely because of the fact that this was a lengthy survey for which participants were not compensated. Hence, people missing on any one item generally had not taken any others. Because of this, listwise deletion was the only practical method of missing data handling, given that other approaches would require people to answer at least some of the items. The people excluded did not differ from those included on age, gender, sexual identity, income, education, and outness. However, differential exclusion occurred for race/ethnicity; $\chi^2 = 21.18(4)$, $p < .001$. While most race/ethnicity groups did not show differential rates of exclusion, African Americans comprised 11.1% of those excluded versus 4.5% of those included. The comparison of eigenvalues from the initial extraction and parallel analysis indicated that a nine-factor solution

best fit the data. After performing a nine-factor EFA, we removed 30 items, in some cases to reduce the number of items on a particular factor to six and in others because of loading less than .40. We then reran the EFA with the remaining 50 items. Parallel analyses supported the nine-factor solution, which accounted for 51.9% of the variance. The nine factors in the final measure and factor loadings for final items in the pattern matrix are shown in Table 1. The final 50 items consisted of 29 items retained from Study 2 and 21 items reworded or generated for Study 3.

Internal Consistency. Using the EFA results, we computed subscale scores that were the mean of the items, each representing a unique domain of LGBT stressors. We also created an overall score of responses to all items. The overall alpha for scores using all 50 items was .92. Internal reliability of scores was acceptable for each subscale: Gender expression ($\alpha = .86$), Vigilance ($\alpha = .86$), Parenting ($\alpha = .83$), Harassment and Discrimination ($\alpha = .85$), Vicarious trauma ($\alpha = .82$), Family of Origin ($\alpha = .79$), HIV/AIDS ($\alpha = .79$), Victimization ($\alpha = .87$), and Isolation ($\alpha = .76$).

Associations With Measures of Psychosocial Adjustment. Table 2 shows Pearson's correlations of the LGBT minority stress scores with measures of psychosocial adjustment. Acceptable construct validity was found in the form of moderate correlations with measures of psychological distress (depression, anxiety, PTSD, and perceived stress). Concurrent validity was supported by moderate correlations with the two general LGB discrimination items (*life would be different* and *interference*). Outness was not associated with the overall score but was associated with three of the subscales in the expected directions.

Gender, Sexual Identity, and Race/Ethnicity Comparisons. We conducted a multivariate analysis of covariance (MANCOVA) to examine gender and sexual identity subgroup differences on the nine DHEQ subscales. Given that these groups differed on key demographic variables, we included age and education level as covariates. The analysis

Table 1. Pattern Matrix Factor Loadings From Principal Factors Exploratory Factor Analysis (Promax Rotation)

Items	Gender Expression	Vigilance	Parenting	Discrimination/ Harassment	Vicarious Trauma	Family of Origin	HIV/ AIDS	Victimization	Isolation
33. Feeling invisible in the LGBT community because of your gender expression	.71	-.08	.05	-.17	.11	.06	.11	-.05	.13
35. Being harassed in public because of your gender expression	.62	-.01	-.03	.34	-.04	-.11	-.05	.08	-.10
36. Being harassed in bathrooms because of your gender expression	.56	.02	-.05	.26	-.06	-.04	-.03	.09	-.11
61. Feeling like you don't fit into the LGBT community because of your gender expression	.80	-.07	.00	-.15	.06	.04	.07	.01	.14
63. Difficulty finding clothes that you are comfortable wearing because of your gender expression	.58	.16	-.01	.10	-.06	-.04	-.06	-.03	-.12
64. Being misunderstood by people because of your gender expression	.82	.05	.00	.00	-.03	.05	-.03	.00	-.02
5. Watching what you say and do around heterosexual people	.03	.50	.04	.04	.06	.00	.02	-.01	.23
25. Pretending that you have an opposite-sex partner	.03	.73	-.02	.00	-.06	-.04	-.03	.06	-.11
26. Pretending that you are heterosexual	.04	.81	-.06	-.14	.06	-.10	.07	.08	.01
27. Hiding your relationship from other people	-.06	.80	.00	.11	-.04	.01	.02	-.06	-.11
55. Avoiding talking about your current or past relationships when you are at work	.00	.58	.13	-.05	-.02	.04	-.01	.07	.11
58. Hiding part of your life from other people	.07	.60	.00	-.03	.06	.11	-.01	-.08	.16
22. Your children being rejected by other children because you are LGBT	-.05	-.02	.83	.07	-.02	-.05	-.02	-.07	-.03
23. Your children being verbally harassed because you are LGBT	-.03	-.02	.83	.01	.02	-.05	.01	-.06	-.04
67. Being treated unfairly by teachers or administrators at your children's school because you are LGBT	.02	.02	.62	.07	-.04	.04	.03	.03	-.04
68. People assuming you are heterosexual because you have children	.01	.03	.54	-.09	.11	.01	.02	.02	-.02
70. Being treated unfairly by parents of other children because you are LGBT	.04	-.01	.71	.00	-.03	.03	-.01	.08	.01
71. Difficulty finding other LGBT families for you and your children to socialize with	.00	.04	.64	-.04	.00	-.04	.03	.01	.06
15. Being called names such as "fag" or "dyke"	-.12	.03	-.05	.67	.10	.01	.07	.06	-.02

(continued)

Table 1. (continued)

Items	Gender Expression	Vigilance	Parenting	Discrimination/ Harassment	Vicarious Trauma	Family of Origin	HIV/ AIDS	Victimization	Isolation
29. People staring at you when you are out in public because you are LGBT	.14	.14	-.04	.68	-.02	-.07	-.06	-.13	.00
44. Being verbally harassed by strangers because you are LGBT	-.03	-.01	.03	.73	.00	.04	.08	-.01	-.02
45. Being verbally harassed by people you know because you are LGBT	-.02	-.05	.09	.50	-.03	.06	.00	.15	.11
46. Being treated unfairly in stores or restaurants because you are LGBT	.09	-.08	.05	.73	.02	.06	-.05	-.09	-.03
49. People laughing at you or making jokes at your expense because you are LGBT	.03	-.11	-.02	.67	.00	.03	.02	.07	.13
10. Hearing about LGBT people you know being treated unfairly	.09	-.06	.00	.13	.64	.00	.02	-.02	-.04
12. Hearing about LGBT people you don't know being treated unfairly	.07	-.03	.01	.15	.53	.00	.01	-.01	-.03
13. Hearing about hate crimes (e.g., vandalism, physical or sexual assault) that happened to LGBT people you don't know	.03	-.01	.01	-.11	.92	-.01	-.05	.04	-.10
16. Hearing other people being called names such as "fag" or "dyke"	.01	-.03	.02	-.08	.88	-.03	-.03	.04	-.11
17. Hearing someone make jokes about LGBT people	-.08	.03	-.02	.32	.51	-.02	-.01	.00	.03
53. Hearing politicians say negative things about LGBT people	-.05	.06	.03	-.02	.48	.06	.07	-.05	.07
18. Family members not accepting your partner as a part of the family	-.10	.14	-.02	.20	-.01	.58	-.01	-.10	-.12
21. Your family avoiding talking about your LGBT identity	.00	.12	-.04	.09	.02	.57	.03	-.08	.04
38. Being rejected by your mother for being LGBT	.05	-.04	-.06	-.05	.00	.72	-.05	.00	.02
39. Being rejected by your father for being LGBT	-.06	-.02	-.09	-.07	.02	.69	.03	.11	-.04
40. Being rejected by a sibling or siblings because you are LGBT	.06	-.09	.05	.00	-.05	.59	.01	.01	-.03
41. Being rejected by other relatives because you are LGBT	.05	-.06	.14	.04	.01	.55	-.02	.09	.02
31. Worry about getting HIV/ AIDS	-.07	-.04	-.05	.10	.02	-.08	.71	-.01	.12
32. Constantly having to think about "safe sex"	.00	-.01	.00	.00	.01	-.04	.75	-.04	.07
72. Worrying about infecting others with HIV	.05	.07	.06	-.11	-.02	.00	.61	.09	-.15
73. Other people assuming that you are HIV positive because you are LGBT	-.06	.00	.00	.12	.00	.06	.45	.21	-.04

(continued)

Table 1. (continued)

Items	Gender Expression	Vigilance	Parenting	Discrimination/ Harassment	Vicarious Trauma	Family of Origin	HIV/ AIDS	Victimization	Isolation
74. Discussing HIV status with potential partners	.07	.03	.04	-.01	-.06	.07	.74	-.11	-.09
76. Being punched, hit, kicked, or beaten because you are LGBT	.01	-.03	-.05	.02	-.02	.04	.01	.83	.05
77. Being assaulted with a weapon because you are LGBT	.00	-.01	.02	-.15	.04	.00	.00	.91	-.03
78. Being raped or sexually assaulted because you are LGBT	.03	.06	.00	-.09	-.02	.06	-.05	.75	.01
79. Having objects thrown at you because you are LGBT	-.02	.06	-.01	.14	.01	-.07	.07	.71	-.03
80. Being sexually harassed because you are LGBT	.02	-.01	.05	.34	.00	-.02	-.05	.51	.04
1. Difficulty finding a partner because you are LGBT	.01	-.04	-.08	.04	-.03	-.04	.14	-.01	.53
2. Difficulty finding LGBT friends	-.13	-.01	.00	.03	-.07	-.05	-.12	.04	.85
3. Having very few people you can talk to about being LGBT	-.01	.14	.05	-.05	-.04	.02	-.08	.06	.72
24. Feeling like you don't fit in with other LGBT people	.20	-.07	-.02	.10	.02	-.01	.03	-.09	.55

Note: LGBT = lesbian, gay, bisexual, and transgender. $n = 852$.

included the 715 individuals who reported being either male or female and either lesbian/gay or bisexual. Individuals who reported their gender identity as transgender or other and those who reported their sexual identity as queer or other were excluded only from these analyses that focused on gender because of small N s. Gender and sexual identity were significant predictors of subscale scores; $F(9, 702) = 39.36$ and $F(9, 702) = 4.39$, respectively, both $p < .001$. Table 3 shows estimated means and follow-up univariate tests. Compared with men, women scored higher on the gender expression, parenting, vicarious trauma, and family of origin subscales with small effect sizes (Cohen's $d = .22, .25, .24$, and $.17$, respectively). In contrast, men scored higher than women on the victimization and HIV/AIDS subscales with small and large effects, respectively ($d = .25$ and 1.11). Compared with bisexual women and men, lesbian women and gay men scored higher on

the discrimination/harassment and family of origin subscales ($d = .19$ and $.27$, respectively) and lower on the isolation subscales ($d = .26$). We conducted a separate MANCOVA to test the effect of race/ethnicity for the subset of participants in the four groups with sufficient sample sizes to provide adequate statistical power: African American/Black, Latina/Latino, Asian/Asian American, and White (this controlled for age, education, gender, and sexual identity). The overall MANCOVA for race/ethnicity was not significant, $F = 1.24(27, 1794)$, $p = .19$, $n = 612$.

Discussion

In this mixed-methods series of three studies, we achieved our four project goals and created a self-administered, 50-item comprehensive measure of day-to-day minority stress experienced by diverse LGBT populations. An important strength of the DHEQ measure

Table 2. Correlations Between DHEQ Scales and Measures of Psychosocial Adjustment

Variable	Range	DHEQ Subscale ^a										DHEQ Total Score
		Gender expression	Vigilance	Parenting	Discrimination/ Harassment	Vicarious trauma	Family of Origin	HIV/AIDS	Victimization	Isolation	Total Score	
Depression ^b	0–3	.28***	.32***	.07*	.29***	.17***	.19***	.23***	.22***	.42***	.41***	
Anxiety ^c	1–3	.30***	.32***	.09**	.28***	.23***	.21***	.19***	.28***	.31***	.42***	
PTSD ^d	1–5	.36***	.37***	.13***	.41***	.30***	.30***	.29***	.34***	.41***	.54***	
Perceived stress ^e	0–4	.21***	.28***	.02	.24***	.14***	.17***	.21***	.16***	.34***	.33***	
Outness ^f	0–7	-.03	-.22***	.15***	.07*	-.01	.06	.02	.05	-.19***	-.03	
Discrimination—life different ^g	1–4	.21***	.26***	.12***	.26***	.17***	.25***	.17***	.09*	.24***	.34***	
Discrimination—interference ^h	1–4	.24***	.35***	.16***	.35***	.23***	.30***	.16***	.20***	.30***	.44***	
Mean (SD)		2.40 (0.77)	3.07 (1.05)	2.20 (0.55)	2.71 (0.97)	4.57 (1.00)	2.84 (0.98)	2.45 (0.75)	2.31 (0.78)	3.08 (1.00)	2.85 (0.53)	

Note: DHEQ = Daily Heterosexist Experiences Questionnaire. Pairwise deletion use for the computation of each correlation coefficient; Ns ranged from 856 to 920.

^a 1 = did not happen/bothered me not at all, 2 = happened, bothered me a little bit, 3 = happened, bothered me moderately, 4 = happened, bothered me quite a bit, 5 = happened, bothered me extremely.

^b Depression = 10-Item Center for Epidemiological Studies Depression Scale.

^c Anxiety = Patient Health Questionnaire—Anxiety.

^d Posttraumatic stress disorder = PTSD Checklist—Civilian Version.

^e Perceived stress = Perceived Stress Scale—Short Form.

^f Outness = Outness Inventory.

^g In response to the item: “How different do you think your life would be if you had not had to deal with the challenges of being LGBT?”

^h In response to the item: “How much has homophobia interfered with your ability to live a fulfilling and productive life?”

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 3. Estimated Daily Heterosexist Experiences Questionnaire Subscale Means (and 95% Confidence Intervals) by Gender and Sexual Identity, Adjusted for Age and Education ($n = 715$)

Scale	Gender ^a		$F(1, 710)$	Sexual Identity ^a		
	Male ($n = 288$)	Female ($n = 427$)		Lesbian/Gay ($n = 530$)	Bisexual ($n = 185$)	$F(1, 710)$
Gender expression	2.15 [2.08, 2.22]	2.28 [2.22, 2.33]	8.95**	2.18 [2.13, 2.23]	2.25 [2.17, 2.33]	2.38
Vigilance	3.00 [2.87, 3.13]	3.15 [3.05, 3.25]	3.57	3.01 [2.92, 3.10]	3.14 [2.99, 3.29]	2.02
Parenting	2.11 [2.04, 2.18]	2.26 [2.21, 2.32]	13.48***	2.19 [2.14, 2.24]	2.18 [2.10, 2.26]	0.08
Discrimination//harassment	2.65 [2.53, 2.76]	2.58 [2.49, 2.67]	1.09	2.70 [2.62, 2.77]	2.53 [2.40, 2.67]	4.38*
Vicarious trauma	4.39 [4.26, 4.51]	4.64 [4.54, 4.74]	10.97***	4.49 [4.40, 4.57]	4.54 [4.39, 4.68]	0.56
Family of origin	2.61 [2.50, 2.73]	2.78 [2.69, 2.87]	5.51*	2.82 [2.74, 2.90]	2.57 [2.43, 2.70]	10.35***
HIV/AIDS	2.95 [2.86, 3.03]	2.15 [2.09, 2.22]	237.42***	2.52 [2.46, 2.58]	2.58 [2.48, 2.68]	1.24
Victimization	2.35 [2.27, 2.44]	2.18 [2.12, 2.24]	12.14***	2.26 [2.20, 2.31]	2.28 [2.18, 2.37]	0.64
Isolation	3.18 [3.05, 3.30]	3.07 [2.97, 3.17]	1.86	3.00 [2.92, 3.08]	3.25 [3.10, 3.40]	8.42**

^aMultivariate analysis of covariance for gender: $F(9, 702) = 39.36, p < .001$; for sexual identity: $F(9, 702) = 4.39, p < .001$.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

is that it quantifies minority stress across a number of different domains suggested to be important by minority stress theory, previous empirical research, and our initial interviews of the population of interest. Scores obtained from this measure showed good psychometric properties including internal consistency, concurrent validity, and construct validity. A notable strength of this instrument is that it is general in nature and can be used with all LGBT people, regardless of sexual identity, gender identity, or race/ethnicity. In addition, our measure reflects two other important characteristics concerning measure development. First, it distinguishes between whether an experience occurred and the amount of subjective distress associated with this experience. Second, it includes a clearly specified time frame for minority stressors.

Quantification of Stressors Unique to LGBT Populations (Goals 1 and 2)

Content for the nine subscales of the DHEQ was developed using an empirical approach (in this case, open-ended discussions with

members of the target population). The domains of LGBT stress are directly in line with previous theory and research. For example, previous research has demonstrated that the more external or distal stressors—such as discrimination and violence—occur for LGBT individuals with greater frequency compared with non-LGBT populations (e.g., Finn & McNeil, 1987, cited in Klinger & Stein, 1994; Herek, 2009). LGBT people are also known to experience rejection from family members because of sexual orientation (e.g., Koken et al., 2009; Nel et al., 2004; Radkowsky & Siegel, 1997) and anti-LGBT discrimination in settings related to their children and parenting (Bos et al., 2004; Clarke et al., 2004). LGBT individuals who do not follow the gender norms of appearance and behavior experience more stress and are viewed as less acceptable, especially by same-sex peers (Horn, 2007, Lehavot & Simoni, 2011; Parrot & Gallagher, 2008). Gay and bisexual men particularly may experience a range of stressors associated with HIV/AIDS (Herek & Capitanio, 1999), and the high seroprevalence in gay male communities has been associated with distress (Yi, Sandfort, & Shidlo, 2010; Yi, Shidlo, & Sandfort, 2011).

Notable internal or more proximal stressors include isolation, which has previously been documented to be high for LGBT individuals in different age-groups (adolescents: Harrison, 2003; Hetrick & Martin, 1987; Radkowsky & Siegel, 1997; elderly: Grossman et al., 2001). Other domains correspond to components of minority stress referred to in theoretical and clinical literature (e.g., vicarious trauma and vigilance in terms of expectations of rejection; Meyer, 1995), but they have not been thoroughly studied empirically because of lack of measurement tools to assess these in previous studies.

Of note, our measure does not include a scale focusing on internalized homophobia, which is an important part of Meyer's (2003) minority stress model. Unlike many other aspects of LGBT minority stress, this dimension has received considerable empirical attention (see Szymanski et al., 2008, for a review) and several measures with good psychometric properties exist. Interestingly, internalized homophobia was only rarely mentioned by participants in our qualitative (Phase 1) study. It may be that this type of stressor is less easily visible and less easily recognized even by LGBT people themselves. Additionally, the fact that the majority of our participants were interviewed in focus groups may have contributed to the relative lack of discussion of this stressor, as well as others. Participants may have been reluctant to talk about their own negative beliefs about being LGBT in a group of other LGBT people.

Psychometric Properties of the DHEQ (Goal 3)

The final version of the DHEQ had psychometric properties that show promise for its use in future research. The overall score and each of the nine subscale scores showed good internal reliability as demonstrated by item factor loadings and Cronbach's alphas. Future replication research should verify the factor structure of these items and their invariance

across key subgroups, perhaps using confirmatory analytic techniques with large sample sizes.

Evidence based on relationships to other variables also appeared good for the DHEQ overall scale and subscales, with most correlating in expected ways with other psychosocial measures. Specifically, higher scores on subscales were generally related to greater emotional distress and to perceived overall LGBT discrimination. This is in line with a growing body of research linking LGBT minority stress to mental health problems (e.g., Hatzenbuehler et al., 2008; Kuyper & Fokkema, 2010; Lehavot & Simoni, 2011; Szymanski, 2009; Szymanski & Sung, 2010). These correlations were moderate in strength, suggesting that although minority stress is related to mental health, the DHEQ subscales are tapping into something other than distress or a negative worldview. Also as expected, degree of outness was differentially associated with subscales. Individuals who were more out reported less stress associated with vigilance and isolation but more stress associated with parenting and harassment/discrimination. Similar patterns have been discussed in the LGBT minority stress literature, wherein individuals who are more out appear to report greater amounts of discrimination (e.g., D'Augelli & Grossman, 2001; Friskopp & Silverstein, 1996), whereas individuals who are less out are more isolated and fearful of potential negative consequences of disclosure (Friskopp & Silverstein, 1996; J. D. Woods, 1993; S. E. Woods & Harbeck, 1991). Interestingly, outness was not significantly correlated with gender expression or victimization, two variables that are known to be associated with each other in LGBT populations. Further research is needed to examine the relationships between the degree to which individuals are "out" (i.e., openly discuss and express their LGBT identity) and the extent to which they experience stressors associated with visibility of this identity.

Differences Between LGBT Subgroups in Minority Stress (Goal 4)

Unlike many previous studies of minority stress, our three-phase study included participants who were diverse in terms of gender, gender identity, sexual identity, and race/ethnicity. The resulting measure (DHEQ) can thus be used to compare minority stress between diverse groups within the LGBT population. With respect to gender, men had more distress associated with victimization and HIV/AIDS; this is in line with men's higher risk of LGBT-specific victimization (D'Augelli & Grossman, 2001; Herek, 2009; Herek, Gillis, & Cogan, 1999) and greater exposure to HIV/AIDS risk-related concerns (Lewis et al., 2001; Yi et al., 2010; Yi et al., 2011). Women reported greater distress associated with gender nonconformity, parenting, and vicarious trauma, which is also in accordance with the long-standing cultural relevance of gender expression in lesbian and bisexual communities (Nestle, 1992), the fact that women in same-sex relationships are more likely than men to be raising children (Solomon, Rothblum, & Balsam, 2004), and the impact of vicarious trauma on lesbian women (Anderson & Mavis, 1996).

Our findings concerning sexual orientation differences suggest that bisexual men and women may be at heightened risk for proximal, internal minority stressors such as isolation, whereas lesbian and gay men may be more subject to external, distal minority stressors. Given the nature of stigma faced by bisexuals in both heterosexual and LGB communities (Heath & Mulligan, 2008; Herek, 2002), bisexual men and women may be less open about their sexuality (Balsam & Mohr, 2007) and may be less visible as sexual minorities, especially when in relationships with an opposite-sex partner. These factors, along with the lack of a well-organized, visible bisexual community in most areas of the United States, can likely create a sense of isolation for bisexuals that differs from the experience of other sexual minorities (Kertzner, Meyer, Frost, & Stirratt,

2009). Alternatively, the greater visibility of lesbians and gay men may subject them to stressors associated with prejudice from others (Friedman & Leaper, 2010).

Interestingly, we did not find racial or ethnic differences in the DHEQ subscales. Moradi et al. (2010) also did not find differences in heterosexist experiences when comparing LGBT ethnic minority and White people. However, other studies have reported greater discrimination reported by LGBT ethnic minorities: Ceballos-Capitaine et al. (1990) as well as Siegel and Epstein (1996) found that African American and Latino men experienced more gay-related prejudice than European Americans. Similarly, a recent study has suggested greater rates of hate crime victimization for lesbian and gay men of color relative to White counterparts (Dunbar, 2006). The inconsistency of these findings with the present study may be because of the fact that the DHEQ is designed to assess LGBT experiences that are common across all racial and ethnic groups. In other words, it is possible that those who are *both* racial/ethnic and sexual minorities experience unique stressors beyond those measured by the DHEQ. Indeed, we have also developed a separate measure specific to LGBT racial/ethnic minority individuals that assesses these unique experiences (Balsam, Molina, Beadnell, Simoni, & Walters, 2011). Researchers might consider the value of using the DHEQ to measure general LGBT stress in combination with—for the subset of participants who are people of color—this other measure. It is important to note that the lack of differences may also be associated with statistical power. Although our study included more ethnic minority LGBT people than the majority of previous studies in this area, the relatively small number of participants in each ethnic or racial group may have contributed to not detecting differences.

Suggestions for Use

The instrument has flexibility that provides several choices in its use. For example, response categories can be scored in terms of whether or not the experiences happened and/

or in terms of the extent to which participants are distressed by these experiences. For the purposes of the current study, we used the latter measure for the purposes of factor analysis, given that this measure is more nuanced and has a greater range of values. Yet a third option would be to use alternative response categories to assess the relative frequency (i.e., daily, weekly) of occurrence of the items on the DHEQ. Our emphasis in developing this scale was to identify items of relevance for LGBT people; future research may examine the utility of alternative response categories to these empirically derived items.

Another kind of choice that users may make is to select only subscales relevant to their research purposes or the population being studied. For example, the HIV subscale may not be relevant for some women and the parenting subscale would not be for people without children. Additionally, some researchers may have hypotheses that pertain only to certain domains of minority stress, such as external stressors (victimization, discrimination, harassment) and may wish to include only the subscales that are most relevant for their own purposes. Furthermore, researchers who are also interested in the internalized homophobia domain may wish to include one of the many measures of this construct in their research along with the DHEQ.

Limitations

Although there are numerous strengths to the current study, several limitations should be kept in mind in interpreting the results. One is that the samples for the three studies were not randomly selected from the population. However, some analyses used statistical tests of inference that typically assume a probability-based sampling approach. Hence, the results of these tests cannot be generalized beyond this sample. Related to this, because recruitment was focused on LGBT venues, it is likely that participants were relatively more well connected to the LGBT community and more open about their sexual orientation than those who did not participate. This was likely more true for Study 1, which involved an in-person interview, than for Studies 2 and 3,

which were anonymous and completed online. Furthermore, as reported above, we have evidence from Study 3 that our participants did indeed vary along the continuum of outness in their daily lives. Still, we cannot know for certain the extent to which any of the findings might hold true in the general LGBT population. Although methodologically difficult to achieve, future research using the DHEQ should include more representative sampling methodologies. Additionally, it will be important in future research to develop shorter measures of minority stress that can be included in population-based health surveys. Along the same lines, although we were careful to include participants only once in Phase 1, the participants in Phases 2 and 3 were anonymous and were recruited from similar sources; thus, it is possible that the same could have participated in both phases.

There are four other limitations. First, given that the purpose of our studies was to develop a measure from the “ground up,” we used EFA in our two quantitative phases. Future research using confirmatory factor analytic techniques is needed to examine how the measure and subscales operate in different samples of LGBT people. Second, our measure is based on responses that are both retrospective and self-reported. As with all such measures, answers are potentially affected by factors such as recall accuracy and willingness to self-disclose. One way that we addressed concerns about recall was by limiting our assessment to the past year, which should be more readily recalled and with greater accuracy. Third, despite targeted sampling efforts, only a small minority of participants in all three studies identified as transgender. Thus, further research is needed to determine the extent to which the types of stressors assessed by the DHEQ are relevant for transgender individuals. Finally, our study did not include other measures of LGBT minority stress, such as Lewis et al.’s (2001) measure, for comparison purposes. It will be important for future research to include this and other measures in order to further develop our understanding of the psychometric and unique assessment properties of the DHEQ.

Conclusions

The DHEQ is a novel questionnaire instrument to assess the unique, daily minority stressors that stem from heterosexist oppression in the lives of diverse LGBT individuals. In contrast to other measures of minority stress that were developed among only specific segments of LGBT populations (i.e., White people, gay men, lesbian women), the DHEQ was developed and validated with LGBT samples that were diverse in race, ethnicity, gender, and sexual identity. Because of this, the DHEQ may be more generalizable to the broader LGBT community than previous measures and can be used to make comparisons across different subpopulations within the LGBT community. Furthermore, because the DHEQ was developed in a comprehensive, three-phase study, it includes assessment of some areas of minority stress that have been excluded from previous measures (e.g., vicarious trauma, isolation). The subscales of the DHEQ provide a quantification of important aspects of minority stress that have been previously highlighted in theory and qualitative research. The DHEQ also provides a clear time frame for stressors as well as response categories that address the frequency and subjective distress subsequent to minority stressors. Future research assessing the comparability of the DHEQ with other minority stress instruments may further confirm its contributions to the literature as well as strengths as a measurement tool.

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References

- Anderson, M. K., & Mavis, B. E. (1996). Sources of coming out self-efficacy for lesbians. *Journal of Homosexuality, 32*, 37–52.
- Andresen, E. B., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine, 10*, 77–84.
- Balsam, K. F., & Mohr, J. J. (2007). Adaptation to sexual orientation stigma: A comparison of bisexual and lesbian/gay adults. *Journal of Counseling Psychology, 54*, 306–319.
- Balsam, K. F., Molina, Y., Beadnell, B., Simoni, J., & Walters, K. W. (2011). Measuring multiple minority stress: The LGBT People of Color Microaggressions Scale. *Cultural Diversity & Ethnic Minority Psychology, 17*, 163–174.
- Bos, H. M. W., van Balen, F., van den Boom, D. C., & Sandfort, T. G. M. (2004). Minority stress, experience of parenthood and child adjustment in lesbian families. *Journal of Reproductive and Infant Psychology, 22*, 291–304.
- Ceballos-Capitaine, A., Szapocznik, J., Blaney, N. T., Morgan, R. O., Millon, C., & Eisdorfer, C. (1990). Ethnicity, emotional distress, stress-related disruption, and coping among HIV seropositive gay males. *Hispanic Journal of Behavioral Sciences, 112*, 135–152.
- Clarke, V., Kitzinger, C., & Potter, J. (2004). “Kids are just cruel anyway”: Lesbian and gay parents’ talk about homophobic bullying. *British Journal of Social Psychology, 43*, 531–550.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health & Social Behavior, 24*, 385–396.
- Conron, K. J., Mimiaga, M. J., & Landers, J. D. (2010). A population-based study of sexual orientation identity and gender differences in adult health. *American Journal of Public Health, 100*, 1953–1960.
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four

- recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, 10(7), 1–9.
- Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 504–553). New York, NY: McGraw-Hill.
- D'Augelli, A. R., & Grossman, A. H. (2001). Disclosure of sexual orientation, victimization, and mental health among lesbian, gay and bisexual older adults. *Journal of Interpersonal Violence*, 16, 1008–1027.
- D'Augelli, A. R., & Hershberger, S. L. (1993). Lesbian, gay, and bisexual youth in community settings: Personal challenges and mental health problems. *American Journal of Community Psychology*, 21, 421–448.
- Diamant, A. L., Wold, C., Spritzer, K., & Gelberg, L. (2000). Health behaviors, health status, and access to and use of health care: A population-based study of lesbian, bisexual, and heterosexual women. *Archives of Family Medicine*, 9, 1043–1051.
- DiPlacido, J. (1998). Minority stress about lesbians, gay men, and bisexuals: A consequence of heterosexism, homophobia, and stigmatizations. In G. Herek (Ed.), *Stigma and sexual orientation* (pp. 138–159). Thousand Oaks, CA: Sage.
- Dunbar, E. (2006). Race, gender, and sexual orientation in hate crime victimization: Identity politics or identity risk? *Violence and Victims*, 21, 323–337.
- Friedman, C., & Leaper, C. (2010). Sexual minority college women's experiences with discrimination: Relations with identity and collective action. *Psychology of Women Quarterly*, 34, 152–164.
- Friskhopp A., & Silverstein, S. (1996). *Straight jobs, gay lives*. New York, NY: Touchstone.
- Grossman, A. H., D'Augelli, A. R., & O'Connell, T. S. (2001). Being lesbian, gay, bisexual, and 60 or older in North America. *Journal of Homosexuality*, 13, 23–40.
- Hamilton, C. J., & Mahalik, J. R. (2009). Minority stress, masculinity, and social norms predicting gay men's health risk behaviors. *Journal of Counseling Psychology*, 56, 132–141.
- Hammelman, T. L. (1993). Gay and lesbian youth: Contributing factors to serious attempts or considerations of suicide. *Journal of Gay & Lesbian Psychotherapy*, 2, 77–89.
- Harper, G. W., & Schneider, M. (2003). Oppression and discrimination among lesbian, gay, bisexual, and transgendered people and communities: A challenge for community psychology. *American Journal of Community Psychology*, 31, 243–253.
- Harrison, T. W. (2003). Adolescent homosexuality and concerns regarding disclosure. *Journal of School Health*, 73, 107–112.
- Hatzenbuehler, M. L., Nolen-Hoeksema, S., & Erikson, S. J. (2008). Minority stress predictors of HIV risk behavior, substance use, and depressive symptoms: Results from a prospective study of bereaved gay men. *Health Psychology*, 27, 455–462.
- Heath, M., & Mulligan, E. (2008). "Shiny happy same-sex attracted woman seeking same": How communities contribute to bisexual and lesbian women's well-being. *Health Sociology Review*, 17, 209–302.
- Herek, G. M. (2002). Heterosexuals' attitudes toward bisexual men and women in the United States. *Journal of Sex Research*, 39, 264–274.
- Herek, G. M. (2009). Hate crimes and stigma-related experiences among sexual minority adults in the United States: Prevalence estimates from a national probability sample. *Journal of Interpersonal Violence*, 24, 54–74.
- Herek, G. M., & Capitanio, J. P. (1999). AIDS and sexual prejudice. *American Behavioral Scientist*, 42, 1126–1143.
- Herek, G., Gillis, J., & Cogan, J. (1999). Psychological sequelae of hate victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology*, 67, 945–951.
- Hetrick, E. S., & Martin, A. D. (1987). Developmental issues and their resolution for gay and lesbian adolescents. *Journal of Homosexuality*, 14, 25–43.
- Hiestand, K. R., Levitt, H. M., & Home, S. G. (2005, February). Gender identity, internalized homophobia, and feminist identity: Non-heterosexual women's quest for healthcare. In H. Levitt (Moderator), *Research on non-heterosexual women's experiences: Informing future psychological work*. Symposium conducted at the meeting of the Association for Women in Psychology, Tampa, FL.

- Horn, S. S. (2007). Adolescents' acceptance of same-sex peers based on sexual orientation and gender expression. *Journal of Youth and Adolescence, 36*, 363–371.
- Kertzner, R. M., Meyer, I. M., Frost, D. M., & Stirratt, M. J. (2009). Social and psychological well-being in lesbians, gay men, and bisexuals: The effects of race, gender, age, and sexual identity. *American Journal of Orthopsychiatry, 79*, 500–510.
- King, M., Semlyen, J., See Tai, S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay, and bisexual people. *BMC Psychiatry, 8*, 70–87.
- Klinger, R. L., & Stein, T. S. (1996). Impact of violence, childhood sexual abuse, and domestic violence and abuse on lesbians, bisexuals, and gay men. In R. P. Cabaj & T. S. Stein (Eds.), *The textbook of homosexuality and mental health* (pp. 801–818). Washington, DC: American Psychiatric Press.
- Koken, J. A., Bimbi, D. S., & Parsons, J. T. (2009). Experiences of familial acceptance-rejection among transwomen of color. *Journal of Family Psychology, 23*, 853–860.
- Kroenke, K., Spitzer, R. L., Williams, J. B. W., Monahan, P. O., & Löwe, B. (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine, 146*, 317–325.
- Kuyper, L., & Fokkema, T. (2010). Loneliness among older lesbian, gay, and bisexual adults: The role of minority stress. *Archives of Sexual Behavior, 39*, 1171–1180.
- Landrine, H., & Klonoff, E. A. (1996). The Schedule of Racist Events: A measure of racial discrimination and study of its negative physical and mental health consequences. *Journal of Black Psychology, 22*, 144–168.
- Lehavot, K., & Simoni, J. M. (2011). The impact of minority stress on mental health and substance use among sexual minority women. *Journal of Consulting and Clinical Psychology, 79*, 159–170.
- Levitt, H. M., & Horne, S. G. (2005, February). She looked like a dyke: The relation between homophobic discrimination and gender expression. In H. Levitt (Moderator), *Research on non-heterosexual women's experiences: Informing future psychological work*. Symposium conducted at the meeting of the Association for Women in Psychology, Tampa, FL.
- Lewis, R. J., Derlega, V. J., Berndt, A., Morris, L. M., & Rose, S. (2001). An empirical analysis of stressors for gay men and lesbians. *Journal of Homosexuality, 42*, 63–88.
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology, 27*, 363–385.
- Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay and bisexual adults in the United States. *American Journal of Public Health, 91*, 1869–1876.
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior, 36*, 38–56.
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin, 129*, 674–697.
- Mohr, J., & Fassinger, R. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement and Evaluation in Counseling and Development, 33*, 66–90.
- Moradi, B., Wiseman, M. C., DeBlaere, C., Goodman, M. B., Sarkees, A., Brewster, M. E., & Huang, Y.-P. (2010). LGB of color and White individuals' perceptions of heterosexual stigma, internalized homophobia, outness: Comparisons of levels and links. *The Counseling Psychologist, 38*, 397–424.
- Nawyn, S. J., Richman, J. A., Rospenda, K. M., & Hughes, T. L. (2000). Sexual identity and alcohol-related outcomes: Contributions of workplace harassment. *Journal of Substance Abuse, 11*, 289–304.
- Nel, J. A., Rich, E., & Joubert, K. D. (2004). Lifting the veil: Experiences of gay men in a therapy group. *South African Journal of Psychology, 37*, 284–306.
- Nestle, J. (1992). The femme question. In J. Nestle (Ed.), *The persistent desire: A femme-butcher reader* (pp. 138–146). Boston, MA: Alyson.
- Noelle, M. (2002). The ripple effect of Matthew Shepard murder: Impact on the assumptive

- worlds of members of the targeted group. *American Behavioral Scientist*, 46, 27–50.
- Parrott, D. J., & Gallagher, K. E. (2008). What accounts for heterosexual women's negative emotional responses to lesbians? Examination of traditional gender role beliefs and sexual prejudice. *Sex Roles*, 59, 229–239.
- Preacher, K. J., & MacCallum, R. C. (2003). Repairing Tom Swift's electric factor analysis machine. *Understanding Statistics*, 2, 13–43.
- Radkowski, M., & Siegel, L. J. (1997). The gay adolescent: Stressors, adaptations, and psychosocial interventions. *Clinical Psychology Review*, 17, 191–216.
- Ragins, B. R., Singh, R., & Cronwell, J. M. (2007). Making the invisible visible: Fear and disclosure of sexual orientation at work. *Journal of Applied Psychology*, 92, 1103–1118.
- Rosario, M., Hunter, J., & Gwadz, M. (1993). *Gay-related Stressful Life Events Measure*. Unpublished instrument.
- Rosario, M., Schrimshaw, E. W., Hunter, J., & Gwadz, M. (2002). Gay-related stress and emotional distress among gay, lesbian, and bisexual youths: A longitudinal examination. *Journal of Consulting and Clinical Psychology*, 70, 967–975.
- Siegel, K., & Epstein, J. A. (1996). Ethnic-racial differences in psychological stress related to gay lifestyle among HIV-positive men. *Psychological Reports*, 79, 303–312.
- Solomon, S. E., Rothblum, E. D., & Balsam, K. F. (2004). Pioneers in partnership: Lesbian and gay male couples in civil unions compared with those not in civil unions and married heterosexual siblings. *Journal of Family Psychology*, 18, 275–286.
- Swim, J. F., Johnston, K., & Pearson, N. B. (2009). Daily experiences with heterosexism: Relations between heterosexist hassles and psychological well-being. *Journal of Social and Clinical Psychology*, 28, 597–629.
- Szymanski, D. M. (2009). Examining potential moderators of the link between heterosexist events and gay and bisexual men's psychological distress. *Journal of Counseling Psychology*, 56, 142–151.
- Szymanski, D. M., Kashubeck-West, S., & Meyer, J. (2008). Internalized heterosexism: Measurement, psychosocial correlates, and research directions. *The Counseling Psychologist*, 36, 525–574.
- Szymanski, D. M., & Sung, M. (2010). Minority stress and psychological distress among Asian American sexual minorities. *The Counseling Psychologist*, 38, 848–872.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Thompson, B., & Daniel, L. G. (1996). Factor analytic evidence for the construct validity of scores: A historical overview and some guidelines. *Educational and Psychological Measurement*, 56, 197–208.
- Vincke, J., & Van Heeringen, K. (2002). Confidant support and the mental wellbeing of lesbian and gay young adults: A longitudinal analysis. *Journal of Community & Applied Social Psychology*, 12, 181–193.
- Waldo, C. R. (1999). Working in a majority context: A structural model of heterosexism as minority stress in the workplace. *Journal of Counseling Psychology*, 46, 218–232.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Paper presented at the meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.
- Woods, J. D. (1993). *The corporate closet: The professional lives of gay men in America*. New York, NY: Free Press.
- Woods, S. E., & Harbeck, K. M. (1991). Living in 2 worlds: The identity management strategies used by lesbian physical educators. *Journal of Homosexuality*, 22, 141–166.
- Yi, H., Sandfort, T. G. M., & Shidlo, A. (2010). Effects of disengagement coping with HIV risk on unprotected sex among HIV-negative gay men in New York City. *Health Psychology*, 29, 205–214.
- Yi, H., Shidlo, A., & Sandfort, T. G. M. (2011). Assessing maladaptive responses to the stress of being at risk of HIV infection among HIV-negative gay men in New York City. *Journal of Sex Research*, 48, 62–73.
- Zamboni, B. D., & Crawford, I. (2007). Minority stress and sexual problems among African

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