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Nonevent Stress Contributes to Mental Health Disparities Based on Sexual Orientation: Evidence From a Personal Projects Analysis

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Abstract

This study examined the role of nonevent stress—in the form of frustrated personal project pursuits in the arenas of relationships and work—as a contributing factor to mental health disparities between heterosexual and lesbian, gay, and bisexual (LGB) populations. A purposive sample of 431 LGB (55%) and heterosexually identified (45%) individuals living in the United States and Canada completed the Personal Project Inventory by describing and rating core personal projects they were pursuing. The intensity of perceived barriers to the achievement of relationship- and work-related personal projects served as indicators nonevent stress. Hierarchical linear regression models tested the hypothesis that nonevent stress contributes to the association between sexual orientation and two indicators of mental health: depressive symptoms and psychological well-being. LGB individuals had significantly more depressive symptoms and lower levels of psychological well-being than heterosexuals. Indicators of nonevent stress were significantly associated with mental health outcomes and their inclusion in models attenuated sexual orientation differences in mental health. The critical indirect pathway leading from sexual minority status to mental health occurred via barriers to relationship projects from interpersonal sources. This research suggests that nonevent stress because of structural and interpersonal stigma may contribute to mental health disparities between LGB and heterosexual individuals. The findings have important implications for policy reform around same-sex relationship recognition and workplace discrimination. Future research and clinical work will benefit by expanding existing foci on stress to include nonevent stressors to better understand and address mental health problems, particularly in LGB populations.

Keywords

mental health disparities; well-being; personal projects; nonevent stress; sexual orientation

A recent review and meta-analysis of research conducted over the past four decades concludes that lesbian, gay, and bisexual (LGB) individuals have higher rates of mental disorder, substance misuse, suicidal ideation, and deliberate self-harm than heterosexual populations (King et al., 2008). Although social approval for same-sex relationships—and homosexuality more generally—has increased dramatically in recent years (e.g., Witeck, 2014), LGB individuals continue to experience structural stigma in the form of discriminatory social policies which have been shown to contribute to mental health disparities based on sexual orientation (Hatzenbuehler, 2010; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010). However, existing research has yet to adequately explore the ways in which structural stigma manifests in LGB individuals' daily lives. Thus, more research is needed to develop a deeper understanding of the psychological mechanisms that account for mental health disparities that may stem from structural inequalities (Institute of Medicine, 2011).

A Social Stress Perspective

The high rates of mental health problems among sexual minority persons are partly attributable to their disproportionate exposure to social stress. Minority stress theory (Brooks, 1981; DiPlacido, 1998; Meyer, 2003) is rooted in broader conceptualizations of social stress theory (Dohrenwend, 2000; Pearlin, 1999), which posits that social stressors—events or circumstances that require individuals to adapt to changes intrapersonally, interpersonally, or in their environment—can diminish health and well-being. These unique stressors, include stigma or expectations of rejection, discrimination (both acute events and chronic everyday mistreatment), internalized homophobia; and stigma concealment (Hatzenbuehler, 2009; Meyer, 2003; Meyer & Frost, 2013; Pachankis, 2007). These minority stress processes—which originate in societal stigma—create strain on individuals' abilities to adapt to and function in their everyday environments and are therefore associated with decreases in mental and physical health (Frost, 2011b; Frost, Lehavot, & Meyer, in press; Frost & Meyer, 2009; Hatzenbuehler, 2009; Meyer, 2003).

Epidemiological research has confirmed that sexual minority individuals experience significantly more social stress than heterosexuals (Meyer, Schwartz, & Frost, 2008), and that their experiences of minority stress contribute to their higher rates of disorder (Mays & Cochran, 2001). However, recent theory and qualitative research points to a need to understand a more subtle and mundane form of minority stress which has thus far been overlooked in attempts to understand factors that contribute to mental health disparities between heterosexuals and LGB individuals: stress that occurs from anticipated events and achievements that do not come to pass (Meyer, Ouellette, Haile, & McFarlane, 2011).

Nonevents: An Unexamined Source of Social Stress

Nonevents—or anticipated events or experiences that do not come to pass—can become chronic stressors that potentially have deleterious effects on mental health (Gersten, Langer, Eisenberg, & Orzeck, 1974; Neugarten, Moore, & Lowe, 1965). Nonevents may become particularly stressful if they do not occur when anticipated events or experiences are normatively experienced, for example: not getting into a desired college or university upon

graduating from high school, not being married by a certain age, being unable to find a relationship partner, and not receiving an anticipated work promotion by a particular career stage. In Pearlin's (1999, p. 401) classic writings on stress process, nonevent stressors can be recognized as "... the products of structured disjunctures between socially valued goals and differential access to opportunities for their achievement." Drawing from this characterization of nonevent stress, we hypothesize that nonevent stressors may be particularly significant in the study of social stress processes among sexual minority populations, who by virtue of their minority statuses face additional social stressors (e.g., Meyer et al., 2008; Thoits, 2010) associated with their ongoing pursuit to achieve their personal goals.

Despite the recognition that nonevents can be the sources of potent social stressors that can lead to deleterious effects on mental health, the empirical study of nonevent stress has been challenging (Meyer et al., 2011). For instance, nonevents have the ironic quality of appearing like *events* in that the passage of a point in time in which an anticipated event would have happened feels *eventful* in itself. To take an extreme example: Being "stranded at the altar" may have both eventful qualities (being publicly rejected in a specific moment in time) as well as stress that results from an anticipated positive event not coming to pass (not getting married as planned; Pearlin, 1999). Moreover, *adaptions* to nonevents can, in turn, present as chronic stressors, as classically defined. To illustrate, the difficulties associated with the absence of a hoped-for promotion can be seen as role captivity or entrapment, in this case the inability to leave or change a stressful job (Wheaton, 1999) rather than a career-related nonevent. As a result, nonevent stress is rarely studied, and is in some respects, a forgotten or overlooked stressor in existing literatures.

Nonevent Stress and Mental Health Among LGB Individuals

In light of the pervasive structural and interpersonal discrimination faced by LGB individuals in the relational and workplace domains, we hypothesize that nonevent stressors in these domains are negatively associated with LGB mental health, and underlie the mental health disparity between LGB and heterosexual individuals. Specifically, at the structural level, LGB individuals' and heterosexuals' intimate relationships are not equally recognized and supported by federal and state policies (Herd & Kertzner, 2006; Wight, LeBlanc, & Badgett, 2013; Wight, LeBlanc, de Vries, & Detels, 2012) and workplace and hiring discrimination based on sexual orientation is legal in many areas (Sears & Mallory, 2011). Moreover, at the interpersonal level, LGB individuals experience a higher degree of stigmatization and discrimination from their family members, coworkers, and peers than heterosexuals (Kurdek, 2004; Lewis, Derlega, Griffin, & Krowinski, 2003; Meyer et al., 2008). Each of these social stressors, which are uniquely experienced by LGB individuals (Frost, 2011b; Meyer, 2003; Meyer & Frost, 2013), may contribute to their heightened risk for exposure to nonevent stress. For example, in the relational domain, LGB individuals who hope to fall in love and publicly begin a relationship with a long-term partner or spouse of the same sex may not ultimately realize these life goals in part because of the lack of support at the social (e.g., rejection from family) and legal levels (e.g., unequal status of same-sex and heterosexual relationships). Similarly, in the workplace domain, LGB individuals may

be denied an earned and sought-after promotion because of institutionalized or interpersonal discrimination that is not prohibited by laws and policies.

Nonevent Stress as Barriers to Personal Project Pursuit

The extent to which individuals feel they experience barriers to the pursuit and achievement of their life goals in socially valued domains serves as one potential indicator of nonevent stress. One conceptual and methodological framework for examining the experience of frustrated pursuits of life goals is Personal Projects Analysis (PPA; Little, 1983). PPA posits that well-being is contingent upon the successful pursuit of meaningful and important life goals or core personal projects. Core personal projects are often focused within the socially valued life domains of intimacy and relationships (Little & Frost, 2013) and work (Salmela-Aro et al., 2004). LGB individuals pursuing core personal projects in the domains of relationships (e.g., getting married, finding a partner, becoming a parent) and work (e.g., getting promoted, receiving a raise, enjoying strong working relationships with colleagues) are more likely to experience frustration to the pursuit of these core projects than heterosexuals given the widespread structural and interpersonal discrimination in these domains previously described (Frost, 2011a; Little & Frost, 2013).

For example, a lesbian woman who has hoped to marry her partner of 10 years will likely experience barriers to the achievement of this core personal project if she lives in a state that constitutionally limits legal marriage to heterosexual relationships and/or her family does not support or value her relationship with her same-sex partner. Such barriers to her achieving the core personal project of getting married may reflect a key source of nonevent stress, given the achievement of her core personal project will be rendered impossible or substantially delayed beyond its normative or expected time of achievement. Although they arise from a stigmatizing social climate, these project barriers do not necessarily manifest in targeted differential treatment or rejection (e.g., chronic or eventful discrimination). Furthermore, insofar as these barriers actually do prevent the project's progress and achievement, they are distinct from expectations of rejection (e.g., perceived stigmatization). In this regard, nonevent stress potentially represents an additional source of social stress that is related to but distinct from other commonly studied forms of minority stress.

It is likely that engagement in meaningful and efficacious work and relationship projects will have a direct and positive effect on mental health for LGB individuals. This is because work and relationship projects are consistent with the psychogenic needs all individuals are thought to have: autonomy, competence, and relatedness (Ryan, 1995; Ryan & Deci, 2000). The denial of opportunities to self-actualize these needs has been theorized as deleterious to mental health (Ryan & Deci, 2000). Mental health affordances occur not only as a result of one's successful completion of his or her personal projects, but also from the everyday experiences of moving one's projects forward: the actual *pursuit* of meaningful core projects (Salmela-Aro & Nurmi, 1996; Wise, 2007). Thus, barriers to core project pursuit—one potential form of nonevent stress—can be deleterious to mental health.

Disparities as More Than Differences in Disorder

Psychiatric epidemiological research on mental health disparities based on sexual orientation have focused exclusively on documenting and explaining the existence of group differences in indicators of psychiatric disorders, such as *DSM*-diagnosable mood disorders, as well as symptoms of disorders like depression (King et al., 2008; Meyer, 2003). However, recent scholarship has called for conceptualization of mental health beyond the mere absence of disorder, but the presence of positive functionality and thriving in the form of psychological well-being (e.g., Kertzner, Meyer, Frost, & Stirratt, 2009). For example, psychological well-being has been conceptualized as indicative of functional constructs, including but not limited to a sense of meaning in life, positive relations with others, and autonomy (Ryan & Deci, 2001; Ryff, 1989; Ryff & Keyes, 1995). Although studies on determinants of mental health within sexual minority populations have examined psychological well-being (Kertzner et al., 2009; Riggle, Rostosky, & Danner, 2009), research on mental health disparities based on sexual orientation has yet to examine psychological well-being as an indicator of positive functionality. Given the structural stigma and minority stress that LGB individuals must contend with, often on a daily basis, it is likely that health disparities may exist in positive functionality as well as in disease symptomology.

Aims and Hypotheses

This study examined the extent to which exposure to non-event stressors—in the form of perceived barriers to personal project pursuit—underlies the mental health disparity between LGB individuals and heterosexuals. First, we hypothesized that LGB individuals would report worse mental health than heterosexuals, based on a longstanding research literature (King et al., 2008). We hypothesized disparities to exist on both negative and positive indicators of mental health, such that LGB individuals would report more symptoms of depression and lower psychological well-being when compared with their heterosexual peers. Second, we hypothesized that higher levels of non-event stress in the core life domains of relationships and work project pursuit would be associated with poorer mental health and psychological well-being. Third, and finally, we hypothesized that mental health differences between LGB individuals and heterosexuals would be significantly attenuated when the effects of nonevent stressors were statistically controlled.

Method

Participants and Procedure

A short (≈ 20 min) Internet-based survey was conducted to test the hypotheses of the current study. Researchers targeting LGB individuals have advocated for the use of purposive Internet-based sampling methods given their ability to reach “hidden” populations (see Kraut et al., 2004) and to address problems with probability and convenience methods (Meyer & Wilson, 2009). This study employed established guidelines for ensuring the quality of data obtained through online questionnaires (following Kraut et al., 2004).

Recruitment announcements were posted in a total of 93 distinct Internet venues advertising the “Personal Projects Survey.” To avoid biasing the sample toward issues of stigma and

sexual minority status, the call for participants used very general language. Participants were told that the study was focused on “how the goals that individuals have in their lives are related to their well-being” and “interested in including a diverse group of people in the study regarding age, race/ethnicity, and sexual orientation.” A purposive sampling strategy was employed using active, passive, and snowball recruitment strategies to increase variability in the sample compared with the typical nonprobability Internet survey, by recruiting both individuals who spend a great deal of time online as well as those who may not have been actively looking to participate in an online survey. Participation in this study was voluntary and participants received no compensation. A total of 1,017 individuals visited the survey page and 514 completed the survey, resulting in a completion rate of 51%. Of those who completed the survey, 64 were excluded from further analysis because they had extensive missing data or were not eligible for the study (e.g., under 18). Further, 19 transgender-identified individuals were not included in the final analysis as the size of this group was not analytically sufficient for between-groups comparison and combining their data with data from LGB individuals would be inappropriate because some transgender individuals identify as LGB and others identify as heterosexual. The final sample consisted of 431 LGB and heterosexually identified individuals. The purposive goals of the sampling strategy achieved roughly equal representation of LGB (55%) and heterosexually identified individuals (45%). On average, participants were 31.71 years old ($SD = 10.75$). Additional demographic characteristics of the sample are presented in Table 1, for the total sample as well as separately for the LGB and heterosexual subsamples.

Measures

Participants completed the following measures in order that follows.

Nonevent stress—Nonevent stress was assessed in the form of perceived barriers to participants’ pursuit and achievement of personal projects within the core life domains of relationships and work. Specifically, barriers to project pursuit were measured with the Personal Project Inventory (PPI; Little, 1983). In response to the PPI, participants were asked to list seven “things they are currently working on or plan to do in the near future” and they provided a short qualitative description of each. Participants were informed that “personal projects can be related to all aspects of life, such as career/job, academic, interpersonal relationships, and family. Examples include finding a job, building a house, finding a boyfriend, taking care of one’s family, moving in with a partner, talking about problems, and so forth.” For the purposes of the study, participants were instructed to include at least one career/job project and at least one romantic relationship project. Example projects are presented in Table 2. Project descriptions were organized on the rows of a matrix with columns added to capture individual ratings for each project, described here.

Next, participants indicated the domains or aspects of their lives on which each project was focused, by checking off whether each of the projects listed pertained to their interpersonal romantic relationships, their job or career, or some other aspect of their lives (McGregor, McAdams, & Little, 2006). Participants then rated each of their projects on an 11-point scale to assess the degree to which they perceived barriers to successfully pursuing these hoped-

for goals, where ratings ranged from 0 (*none or no barriers*) to 10 (*a lot*). This rating process was done for a range of potential sources of barriers to one's personal projects, and the present analyses focus on *interpersonal barriers*, where they separately rated the degree to which they perceived barriers in their pursuit of each personal project from four groups of people in their lives: (a) family, (b) friends, (c) coworkers, and (d) "other people;" as well as on *macrosocial barriers*, where they separately rated the degree to which they perceived barriers as stemming from (e) their neighborhood and community, and (f) laws and policies. Rating prompts were presented separately for each source (a through f). Because the PPI assesses dynamic systems of interrelated life pursuits, one would expect there to be only moderate levels of internal consistency within each project dimension (Little, Lecci, & Watkinson, 1992). As a result, internal consistency coefficients for project dimensions have been shown to range from .53 to .77 and test-retest correlations range from .39 to .68 (Little et al., 1992). Internal consistency coefficients for the dimensions assessed in the current study ranged from .58 to .90.

Depressive symptoms—The Center for Epidemiological Studies depression scale (CESD; Radloff, 1977) is a 20-item measure of depressive symptoms experienced over a 1-week period prior to the survey. Items were phrased in such a way that participants were asked how often during the past week they "could not get going," "felt depressed," "felt hopeful about the future," and "felt people dislike you." Participants responded on a 4-point scale ranging from 0 (*rarely or none of the time, < 1 day*) to 3 (*most or all of the time, 5–7 days*). Numerous studies have demonstrated the convergent validity of the CESD among both clinical and nonclinical samples in the form of large correlations with clinical reports of depression, *DSM* depression diagnoses, the Hamilton Rating Scale for Depression, and the Symptom Checklist-90 (McDowell & Newell, 2006). Internal consistency for scores on the CESD in the current study was .90.

Psychological well-being—The Psychological Well-Being Measure (Ryff & Keyes, 1995) consists of 18 items. This scale was developed to integrate theories of life course development and positive mental health conceptions of psychological well-being using a construct-oriented approach to personality assessment. This measure was considered to assess a form of eudaemonic well-being, which is an indication of the degree to which a person is fully functioning psychologically and socially, as opposed to a hedonic measure of well-being, which focuses on happiness, pleasure, and pain avoidance. This measure has proven useful in prior research on predictors of mental health LGB samples (Kertzner, Meyer, Frost, & Stirratt, 2009). Scores on this measure in the current study demonstrated internal consistency at the level of .84.

Results

Data Preparation

Small to moderate amounts of data were missing on some PPI ratings and an imputation technique based in maximum likelihood estimation was used to estimate and replace missing values (Schafer & Olsen, 1998). Four composite scores were created to summarize interpersonal barriers (i.e., the average of sources a through d) separately for work and

relationship projects, and macrosocial barriers (i.e., the average of sources e and f) separately for work and relationship projects. All dimensions were coded so that higher scores indicated more barriers. A binary variable was created to compare LGB (1) and heterosexual (0) participants.

Tests of Hypotheses

All tests of hypotheses were conducted using an approach to mediation in hierarchical linear regression (Preacher & Hayes, 2008). All results were controlled for gender (female = 1, male = 0), race/ethnicity (racial/ethnic minority = 1, White = 0), and education, a key indicator of socioeconomic status (SES; where having completed a BA or greater = 1, and having some college or less = 0).

Hypothesis 1: LGB individuals would report worse mental health than heterosexuals—

The first step of our approach to testing mediation required demonstrating a difference between LGB and heterosexual individuals on the indicators of mental health under investigation: depressive symptoms and psychological well-being. As hypothesized, LGB individuals demonstrated significantly higher rates of depressive symptoms (Table 3, Model 1a) and lower levels of psychological well-being (Table 3, Model 2a) when compared with heterosexuals.

Hypothesis 2: Higher levels of nonevent stress in the core life domains of relationships and work project pursuit would be associated with poorer mental health and psychological well-being—

In the second step of our approach to mediation, we examined the degree to which nonevent stress, in the form of barriers to core personal project pursuits in the domains of romantic relationships and work, were associated with depressive symptoms and psychological well-being. As indicated in Table 3, heightened experiences of macrosocial barriers to relationship projects were associated with a higher frequency of depressive symptoms and lower levels of psychological well-being. Interpersonal barriers to relationship projects were significantly associated with poorer psychological well-being, and marginally predictive of the frequency of depressive symptoms ($p = .06$). Macrosocial barriers to work projects were associated with poorer psychological well-being, but not significantly related to depressive symptoms. Barriers to work projects from interpersonal sources were not associated with depressive symptoms or psychological well-being.

Hypothesis 3: Mental health disparities between LGB individuals and heterosexuals would be significantly attenuated when the effects of nonevent stressors were statistically controlled—

Sexual orientation differences in depressive symptoms and psychological well-being were attenuated when indicators of nonevent stress were included in the models. Supporting the study hypotheses, when the effects of nonevent stressors were added to the models, sexual orientation disparities in both indicators of mental health were no longer statistically significant (Table 3, Models 1b and 2b). Finally, to test the size and significance associated with the indirect effects under investigation, bootstrapping procedures were implemented to examine the degree to which nonevent stressors mediated the effects of sexual orientation on mental health outcomes. Bias-

corrected confidence intervals (95%) that did not include zero were used as indicators of a statistically significant indirect effect (Preacher & Hayes, 2008). The indirect pathway leading from sexual minority status to psychological well-being via barriers to relationship goals perpetrated by interpersonal sources was statistically significant, $b = -.04$, $SE = .02$, 95% CI $[-.09, -.01]$. No other indirect effects were statistically significant.

Discussion

These findings provide support for the minority stress hypothesis (Meyer, 2003) that stress stemming from a stigmatizing social climate accounts for the mental health disparity between LGB and heterosexual individuals (King et al., 2008). This is accomplished by the present study in its demonstration that nonevent stress—in the form of barriers to core life pursuits in relationships and work—accounts for differences between LGB and heterosexual individuals in depressive symptoms and psychological well-being. The present findings also suggest an expansion of the minority stress “universe” beyond the previously articulated effects of event-based and chronic stressors to include the stress stemming from hoped-for events that do not occur: nonevent stress (Meyer et al., 2011; Wheaton, 1994). Future research and intervention agendas focused on advancing the minority stress model’s ability to account for the etiology of important health disparities will likely benefit from incorporating indicators of nonevent stress.

The present study also confirms hypotheses that arise from existing research on personal project pursuit: that the frustration of the pursuit of core projects can be detrimental to mental health and psychological well-being (Little, 2005). Moreover, in the present study we also demonstrate that PPA provides a potentially important window into the experience of nonevent stress, which has become a largely forgotten domain of social stress (Pearlin, 1999; Wheaton, 1999). Moreover, because nonevent stress results from a wide variety of hoped-for events or experiences that do not come to pass, it is difficult to develop standardized measures that are sufficiently wide-reaching to anticipate and capture its experience. However, by taking a constructivist and idiographic approach within PPA (Little, 2000), individuals were able to specify the unique projects that they hoped to achieve and provide quantitative indicators reflecting the degree to which the achievement of their projects was prevented by various sources. We hope that researchers interested in investigating the ways that nonevent stress can become a critical and enduring source of difficulty and strain in people’s lives will benefit from the use of PPA and other constructivist and idiographic methods.

PPA can uniquely extend current understandings of how social disadvantage creates disproportionate barriers to successful personal project pursuit for minority persons—stemming from structural and interpersonal forces—and this disproportionate burden contributes to persistent disparities in mental health. In other words, the structural forms of stigma that exist in discriminatory social policies are likely to manifest in the form of barriers to core project pursuit creating “heterosexist opportunity structures” (Frost & Meyer, 2009; Meyer & Dean, 1998) that privilege heterosexuals’ pursuit of core projects, while limiting LGB individuals’ pursuits of core projects. Thus, the present analysis reveals the ways in which structural and interpersonal stigma impacts the daily lived experience of

LGB individuals, and suggests that nonevent stress—in the form of frustrated project pursuit—is one mechanism by which discriminatory social policy and prejudicial attitudes may impact sexual minority mental health and psychological well-being. Future research should attempt to integrate a focus on indicators of structural and interpersonal stigma and minority stress along with indicators of nonevent stress to investigate this possibility further. In this regard, PPA represents a way in which personality and social psychological constructs can be useful in better understanding the mechanisms underlying health disparities by bridging psychological, epidemiological, and sociological perspectives (Major, Mendes, & Dovidio, 2013).

The inclusion of psychological well-being as an indicator of mental health is an important advancement to existing perspectives on health disparities based on sexual orientation. The present findings suggest that not only do LGB individuals evidence higher symptoms of mental health problems, but they also evidence lower levels of positive functionality inclusive of constructs such as autonomy, positive relations with others, and meaning in life. More importantly, these sexual orientation differences in both symptoms of disorder and positive functionality seem to be attributable to social inequalities and societal stigma, rather than a function of sexual orientation in and of itself.

Although the inclusion of indicators of nonevent stress attenuated sexual orientation differences in mental health outcomes, we were only able to detect indirect effects with regard to interpersonal barriers to relationship projects and the outcome of psychological well-being. This is likely because of a more pronounced difference in barriers between the two groups in the domain of romantic relationships as compared to the work domain (Frost, 2011a). However, this finding fits well with the longstanding research literature on the health benefits of marriage among the general population (Hughes & Waite, 2009; Umberson, Thomeer, & Williams, 2012), and emerging studies have begun to suggest same-sex marriage is also associated with better mental health among LGB individuals (Wight et al., 2013; Wight et al., 2012).

Furthermore, barriers to romantic relationship pursuits may be more tangible than barriers to work pursuits given the status of legal policies corresponding to these life domains in the United States at present. In the work domain, no explicit federal policies exist that protect LGB individuals from discrimination in hiring, firing, and promotion practices, but several states and organizations have laws and policies that prohibit such discrimination based on sexual orientation. Additionally, LGB individuals may conceal their sexual minority identities to avoid barriers to their work pursuits that may arise from discrimination. The policy context is importantly different in the domain of romantic relationships. At the time of this study, the federal Defense of Marriage Act (DOMA) explicitly limited legal marriage to one man and one woman, thereby implicitly prohibiting same-sex couples from obtaining the same protections and benefits for their relationships as heterosexual couples. The majority of U.S. states still maintain social policies that limit marriage to heterosexual couples. Relationship status is also not as concealable as an individual sexual minority identity, because publicly partnering with an individual of the same gender makes both partners' sexual orientations known to others and may expose them to barriers to relational pursuits at the interpersonal and macrosocial level. These important differences in the policy

climates surrounding LGB individuals' pursuits of work and relationships may explain why barriers in the relational domain were more tangible and therefore demonstrated a greater association with indicators of mental health than barriers to work pursuits.

Implications for Clinicians and Policy Makers

The present findings have important implications for individual-level clinical practice, as well as policy-level change efforts focused on improving the mental health and well-being of sexual minority individuals. For example, clinical and counseling efforts with sexual minority patients experiencing symptoms of depression, dysthymia, and lack of meaning and agency may benefit from understanding patients' perceived barriers—and their sources—to their relational and work pursuits and assisting them in finding alternative means of achieving their projects and overcoming existing barriers when possible. However, despite the need for immediate access to counseling and clinical services for LGB individuals confronting core project barriers (i.e., to help them cope with nonevent stress), efforts are needed to address barriers at their sources to prevent the occurrence of nonevent stress. This can only be achieved by removing structural barriers in the form of limiting social policies (e.g., state-level restrictions of marriage to heterosexual couples) and interpersonal barriers that may result from prejudice and discrimination, which persist in the United States and many parts of the world. Thus, a multilevel approach to addressing the sources (e.g., policy change, prejudice reduction campaigns) and negative consequences (e.g., clinical and counseling interventions) of nonevent stress is needed to adequately address mental health and well-being disparities based on sexual orientation (Cook, Purdie-Vaughns, Meyer, & Busch, in press; Meyer & Frost, 2013; Ouellette, 1998).

Limitations and Suggestions for Future Research

In recognition of the fact that it is difficult to measure and study the effects of something that does not occur in a person's life, cross-sectional studies are inherently limited in their ability to *directly* assess nonevent stress. Future attempts to more accurately account for the experience and impact of nonevent stress must include prospective designs that document the anticipated occurrence of an event or achievement of a goal and follow individuals through time to determine whether or not the event or achievement occurs within the initially expected or socially desirable time-frame. Additionally a prospective design would allow for determination of causality in the observed associations between project barriers and indicators of mental health, as the current study is not able to rule out the alternative hypothesis that individuals with more depressive symptoms may be more likely to perceive barriers to their projects. The fact that all participants completed the PPI before the CESD and psychological well-being measures may have introduced a confound that cannot be accounted for in the present analysis. The time and effort required to complete the PPA may have introduced a selection bias based on performance demand, which, along with untended consequences of our sampling strategy, may further limit the generalizability of the present findings. This research is further limited to the policy and interpersonal climate at the time of the research, and our findings do not generalize to other parts of the world with different levels of acceptance and legal treatment of LGB individuals. It is also limited by the use of only two indicators of mental health, which are limited to self-report and a narrow range of

symptoms. Future research should include a broader range of outcomes that account for severity of symptoms of mental health problems and their impact on function.

Although not necessarily a limitation of the study, it is worth noting that the effect sizes associated with sexual orientation differences in depressive symptoms and psychological well-being observed in the current study are considered small (Cohen, 1992). Despite their small size, they may still be indicative of a clinically significant difference, given probability estimates corresponding to our hypothesis tests indicate these differences are not likely to be because of chance. These differences also persist above and beyond other factors known to influence mental health (e.g., SES, gender), providing further evidence for their clinical significance. Furthermore, our purposive sample is not a representative probability sample. Researchers have noted it is harder to detect significant sexual orientation differences in mental health in nonprobability samples (Meyer, 2003) because nonprobability samples are not as inclusive of those LGB individuals at greatest risk for mental health problems (e.g., closeted individuals who are not connected to sexual minority communities).

Although we received support for our hypothesis that the inclusion of indicators of nonevent stress would attenuate sexual orientation differences in mental health, we did not observe consistent indirect effects leading from sexual orientation to mental health outcomes via nonevent stress (the only indirect pathway that was significant was the sexual orientation → interpersonal barriers to relationship projects → psychological well-being pathway). There are statistical concerns that likely prevented our ability to detect consistent indirect effects. Most notable is that our indicators of nonevent stress (i.e., the “mediating variables”) were measured with some error, which likely attenuated their direct effects and the corresponding indirect effects.

Conclusion

Despite its limitations, this study provides a provocative first attempt at understanding the degree to which nonevent stress accounts for the well-demonstrated mental health disparity between LGB and heterosexual populations. Future attempts to understand and address the structural and interpersonal factors that negatively impact the mental health of LGB individuals are likely to benefit from attending to the nonevent stress resulting from the social disadvantage and interpersonal discrimination currently experienced by sexual minority individuals in most societies. The use of idiographic and constructionist approaches—such as PPA—will likely prove fruitful in these aims via their potential to integrate psychological, epidemiological, and sociological perspectives on social stress and health disparities.

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References

- Brooks, VR. Minority stress and lesbian women. Lexington, MA: Lexington Books; 1981.
- Cohen J. A power primer. *Psychological Bulletin*. 1992; 112:155–159. [PubMed: 19565683]
- Cook JE, Purdie-Vaughns V, Meyer IH, Busch JTA. Intervening within and across levels: A multilevel approach to stigma and public health. *Social Science & Medicine*. (in press).
- DiPlacido, J. Minority stress among lesbians, gay men, and bisex-uals: A consequence of heterosexism, homophobia, and stigmatization: A consequence of heterosexism, homophobia, and stigmatization. In: Herek, G., editor. *Stigma and sexual orientation: Understanding prejudice against lesbians, gay men, and bisexuals*. Thousand Oaks, CA: Sage; 1998. p. 138-159.
- Dohrenwend BP. The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior*. 2000; 41:1–19. [PubMed: 10750319]
- Frost DM. Similarities and differences in the pursuit of intimacy among sexual minority and heterosexual individuals: A personal projects analysis. *Journal of Social Issues*. 2011a; 67:282–301.
- Frost DM. Social stigma and its consequences for the socially stigmatized. *Social and Personality Psychology Compass*. 2011b; 5:824–839.
- Frost DM, Lehavot K, Meyer IH. Minority stress and physical health among sexual minority individuals. *Journal of Behavioral Medicine*. (in press).
- Frost DM, Meyer IH. Internalized homophobia and relationship quality among lesbians, gay men, and bisexuals. *Journal of Counseling Psychology*. 2009; 56:97–109. [PubMed: 20047016]
- Gersten, JC.; Langer, TS.; Eisenberg, JG.; Orzeck, L. Child behavior and life events: Undesirable change or change per se?. In: Dohrenwend, BS.; Dohrenwend, BP., editors. *Stressful life events: Their nature and effects*. New York, NY: Wiley; 1974. p. 159-170.
- Hatzenbuehler ML. How does sexual minority stigma “get under the skin?” A psychological mediation framework. *Psychological Bulletin*. 2009; 135:707–730. [PubMed: 19702379]
- Hatzenbuehler ML. Social factors as determinants of mental health disparities in LGB populations: Implications for public policy. *Social Issues and Policy Review*. 2010; 4:31–62.
- Hatzenbuehler ML, McLaughlin KA, Keyes KM, Hasin DS. The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: A prospective study. *American Journal of Public Health*. 2010; 100:452–459. [PubMed: 20075314]
- Herd G, Kertzner R. I do, but I can’t: The impact of marriage denial on the mental health and sexual citizenship of lesbians and gay men in the United States. *Sexuality Research and Social Policy Journal of NSRC*. 2006; 3:33–49.
- Hughes ME, Waite LJ. Marital biography and health at mid-life. *Journal of Health and Social Behavior*. 2009; 50:344–358. [PubMed: 19711810]
- Institute of Medicine. *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: The National Academies Press; 2011.
- Kertzner RM, Meyer IH, Frost DM, Stirratt MJ. Social and psychological well-being in lesbians, gay men, and bisexuals: The effects of race, gender, age, and sexual identity. *American Journal of Orthopsychiatry*. 2009; 79:500–510. [PubMed: 20099941]
- King M, Semlyen J, Tai SS, Killaspy H, Osborn D, Popelyuk D, Nazareth I. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry*. 2008; 8:70. [PubMed: 18706118]
- Kraut R, Olson J, Banaji M, Bruckman A, Cohen J, Couper M. Psychological research online: Report of Board of Scientific Affairs’ Advisory Group on the conduct of research on the Internet. *American Psychologist*. 2004; 59:105–117. [PubMed: 14992637]
- Kurdek LA. Are gay and lesbian cohabiting couples really different from heterosexual married couples? *Journal of Marriage and Family*. 2004; 66:880–900.
- Lewis RJ, Derlega VJ, Griffin JL, Krowinski AC. Stressors for gay men and lesbians: Life stress, gay-related stress, stigma consciousness, and depressive symptoms. *Journal of Social and Clinical Psychology*. 2003; 22:716–729.

- Little BR. Personal projects a rationale and method for investigation. *Environment and Behavior*. 1983; 15:273–309.
- Little, BR. Persons, contexts, and personal projects: Assumptive themes of a methodological transactionalism. In: Wapner, S.; Demick, J.; Yamamoto, T., editors. *Theoretical perspectives in environment-behavior research: Underlying assumptions, research problems, and methodologies*. Dordrecht, Netherlands: Kluwer Academic Publishers; 2000. p. 79-88.
- Little BR. Personality science and personal projects: Six impossible things before breakfast. *Journal of Research in Personality*. 2005; 39:4–21.
- Little, BR.; Frost, DM. Aspects of love: Connecting, romancing, and caring. In: Hojjat, M.; Cramer, D., editors. *Positive psychology of love*. New York, NY: Oxford University Press; 2013. p. 162-176.
- Little BR, Lecci L, Watkinson B. Personality and personal projects: Linking big five and PAC units of analysis. *Journal of Personality*. 1992; 60:501–525. [PubMed: 1635052]
- Major B, Mendes WB, Dovidio JF. Intergroup relations and health disparities: A social psychological perspective. *Health Psychology*. 2013; 32:514–524. [PubMed: 23646834]
- Mays VM, Cochran SD. Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*. 2001; 91:1869–1876. [PubMed: 11684618]
- McDowell, I.; Newell, C. *Measuring health: A guide to rating scales and questionnaires*. New York, NY: Oxford University Press; 2006.
- McGregor I, McAdams DP, Little BR. Personal projects, life stories, and happiness: On being true to traits. *Journal of Research in Personality*. 2006; 40:551–572.
- Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*. 2003; 129:674–697. [PubMed: 12956539]
- Meyer, IH.; Dean, L. Internalized homophobia, intimacy, and sexual behavior among gay and bisexual men. In: Herek, GM., editor. *Stigma and sexual orientation: Understanding prejudice against lesbians, gay men, and bisexuals*. Thousand Oaks, CA: Sage; 1998. p. 160-186.
- Meyer, IH.; Frost, DM. Minority stress and the health of LGB individuals. In: Patterson, CJ.; D'Augelli, AR., editors. *Handbook of psychology and sexual orientation*. New York, NY: Oxford University Press; 2013. p. 252-266.
- Meyer IH, Ouellette SC, Haile R, McFarlane TA. “We’d be free:” Narratives of life without homophobia, racism, or sexism. *Sexuality Research and Social Policy*. 2011; 8:204–214. [PubMed: 24009487]
- Meyer IH, Schwartz S, Frost DM. Social patterning of stress and coping: Does disadvantaged social statuses confer more stress and fewer coping resources? *Social Science & Medicine*. 2008; 67:368–379. [PubMed: 18433961]
- Meyer IH, Wilson PA. Sampling lesbian, gay, and bisexual populations. *Journal of Counseling Psychology*. 2009; 56:23–31.
- Neugarten BL, Moore JW, Lowe JC. Age norms, age constraints, and adult socialization. *American Journal of Sociology*. 1965; 70:710–717.
- Ouellette, SC. The value and limitations of stress models in HIV/AIDS. In: Dohrenwend, BP., editor. *Adversity, stress, and psycho-pathology*. New York, NY: Oxford University Press; 1998. p. 142-160.
- Pachankis JE. The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin*. 2007; 133:328–345. [PubMed: 17338603]
- Pearlin, LI. The stress process revisited. In: Kaplan, HP.; Aneshensel, CS.; Phelan, JC., editors. *Handbook of the sociology of mental health*. New York, NY: Springer; 1999. p. 395-415.
- Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*. 2008; 40:879–891. [PubMed: 18697684]
- Radloff LS. The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.

- Riggle EDB, Rostosky SS, Danner F. LGB identity and eudaimonic well being in midlife. *Journal of Homosexuality*. 2009; 56:786–798. [PubMed: 19657935]
- Ryan R. Psychological needs and the facilitation of integrative processes. *Journal of Personality*. 1995; 63:397–427. [PubMed: 7562360]
- Ryan R, Deci E. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*. 2000; 55:68–78. [PubMed: 11392867]
- Ryan R, Deci E. On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*. 2001; 52:141–166.
- Ryff CD. Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*. 1989; 57:1069–1081.
- Ryff CD, Keyes CLM. The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*. 1995; 69:719. [PubMed: 7473027]
- Salmela-Aro K, Näätänen P, Nurmi JE. The role of work-related personal projects during two burnout interventions: A longitudinal study. *Work & Stress*. 2004; 18:208–230.
- Salmela-Aro K, Nurmi J. Depressive symptoms and personal project appraisals: A cross-lagged longitudinal study. *Personality and Individual Differences*. 1996; 21:373–381.
- Schafer JL, Olsen MK. Multiple imputation for multivariate missing-data problems: A data analyst's perspective. *Multivariate Behavioral Research*. 1998; 33:545–571.
- Sears, B.; Mallory, C. Documented evidence of employment discrimination & its effects on LGBT people. Los Angeles, CA: The Williams Institute, UCLA School of Law; 2011.
- Thoits PA. Stress and health: Major findings and policy implications. *Journal of Health and Social Behavior*. 2010; 51:S41–S53. [PubMed: 20943582]
- Umberson, D.; Thomeer, MB.; Williams, K. Family status and mental health. In: Aneshensel, CS.; Phelan, JC.; Bierman, A., editors. *Handbook of the sociology of mental health*. 2nd edition.. Dordrecht, Netherlands: Kluwer Academic Pubs; 2012. p. 405-432.
- Wheaton, B. Sampling the stress universe. In: Avison, WR.; Gotlib, IG., editors. *Stress and mental health. Contemporary issues and prospects for the future*. New York, NY: Springer; 1994. p. 77-114.
- Wheaton, B. Social stress. In: Aneshensel, CS.; Phelan, JC., editors. *Handbook of the sociology of mental health*. New York, NY: Kluwer Academic/Plenum Press Publishers; 1999. p. 277-300.
- Wight RG, LeBlanc AJ, Badgett MVL. Same-sex legal marriage and psychological well-being: Findings from the California health interview survey. *American Journal of Public Health*. 2013; 103:339–346. [PubMed: 23237155]
- Wight RG, LeBlanc AJ, de Vries B, Detels R. Stress and mental health among midlife and older gay-identified men. *American Journal of Public Health*. 2012; 102:503–510. [PubMed: 22390515]
- Wise, BS. Successful pursuit of personal projects and subjective well-being. In: Little, BR.; Salmela-Aro, K.; Phillips, SD., editors. *Personal project pursuit: Goals, action and human flourishing*. Mahwah, NJ: Erlbaum; 2007. p. 301-328.
- Witeck B. Cultural change in acceptance of LGBT people: Lessons from social marketing. *American Journal of Orthopsychiatry*. 2014; 84:19–22. [PubMed: 24826822]

Table 1

Sample Characteristics

Variables	LGB (n = 239)		Heterosexual (n = 192)		Total (N = 431)	
	n	%	n	%	n	%
Gender						
Male	94	39	38	20	132	31
Female	145	61	154	80	299	69
Sexual orientation						
Gay or lesbian	161	67	NA	NA	161	37
Bisexual	65	27	NA	NA	65	15
Other	13	5	NA	NA	13	3
Straight	NA	NA	192	45	192	45
Race/ethnicity [†]						
White	182	76	123	64	305	71
Black	16	7	43	22	59	14
Latino	18	8	6	3	24	6
Asian	18	8	9	5	27	6
Native American	7	3	3	2	10	2
Pacific Islander	3	1	1	1	4	1
Other	13	5	15	8	28	7
Education						
Some college	136	57	111	58	247	57
HS diploma	103	43	81	42	184	43
Employment [†]						
Full-time	128	54	98	51	226	52
Part-time	46	19	41	21	87	20
Unemployed	37	15	25	13	62	14
Student	80	33	74	39	154	36
Relationship status						
Single	111	46	72	47	183	43

Variables	LGB (<i>n</i> = 239)		Heterosexual (<i>n</i> = 192)		Total (<i>N</i> = 431)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
In relationship	128	54	120	63	248	57
Cohabit [‡]	82	64	58	48	140	56
Married/D.P. [‡]	29	23	48	40	77	31

[‡] May add up to more than 100% because participants were allowed to select more than one option.

[‡] Percentages are out of the total number of participants in a relationship, not the total sample D.P. = domestic partner.

Table 2

Example Personal Projects in the Domains of Relationships and Work

Relationship projects		Work projects	
LGB individuals	Heterosexual individuals	LGB individuals	Heterosexual individuals
"Find a life partner" (Male, 28)	"Meet a guy with a career" (Female, 28)	"Expanding my private practice through referrals" (Male, 30)	"To complete my business plan for a concert and events promotion company" (Male, 31)
"Moving in to a new apartment with my girlfriend" (Female, 26)	"Buy a house" (Female, 28)	"Finding work with a nonprofit" (Female, 23)	"Finding a new job" (Female, 40)
"Be more expressive of my love For my boyfriend" (Male, 35)	"Cherishing my wife more" (Male, 41)	"Finish dissertation" (Female, 29)	"Obtaining my Psyd" (Female, 24)
"Getting married (legally)" (Male, 31)	"Plan wedding and honeymoon" (Male, 31)	"Increase amount of time at work actually spent completing work" (Male, 36)	"Producing more draft opinions more often" (Female, 28)
"Starting couples therapy with my partner" (Male, 44)	"Being faithful to my boyfriend" (Female, 23)	"Getting my level 2 special education teaching credential in CA" (Male, 54)	"Staying current with graphics software" (Female, 60)

Note. Participants self-designated project domains. Example projects are not edited from participants' original descriptions. Gender and age of participant are provided in parentheses.

Table 3
Regression Models Explaining Sexual Orientation Differences in Depressive Symptoms and Psychological Well-Being

	<i>b</i>	<i>B</i>	<i>p</i>	95% CI	
				Lower	Upper
Depressive symptoms					
Model 1a ($R^2 = .08$)					
Intercept	21.65		0.00	18.66	24.64
Female	-1.19	-0.05	0.35	-3.66	1.29
Racial/ethnic minority	-0.16	-0.01	0.90	-2.57	2.25
Education: BA or greater	-6.31	-0.26	0.00	-8.59	-4.03
Lesbian, gay, or bisexual	2.70	0.11	0.02	0.40	5.00
Model 1b ($R^2 = .20$)					
Intercept	17.16		0.00	14.11	20.21
Female	-1.00	-0.04	0.40	-3.33	1.33
Racial/ethnic minority	-0.15	-0.01	0.90	-2.42	2.11
Education: BA or greater	-5.10	-0.21	0.00	-7.26	-2.94
Lesbian, gay, or bisexual	2.09	0.09	0.06	-0.11	4.29
Interpersonal barriers to relationship projects	0.89	0.12	0.06	-0.04	1.82
Interpersonal barriers to work projects	0.24	0.03	0.57	-0.59	1.08
Macrosocial barriers to relationship projects	1.88	0.20	0.00	0.79	2.96
Macrosocial barriers to work projects	0.61	0.08	0.16	-0.25	1.48
Psychological well-being					
Model 2a ($R^2 = .09$)					
Intercept	5.07		0.00	4.85	5.29
Female	0.23	0.12	0.01	0.05	0.41
Racial/ethnic minority	0.11	0.06	0.21	-0.06	0.29
Education: BA or greater	0.43	0.24	0.00	0.26	0.60
Lesbian, gay, or bisexual	-0.17	-0.10	0.04	-0.34	0.00
Model 2b ($R^2 = .24$)					
Intercept	5.41		0.00	5.19	5.63
Female	0.21	0.11	0.02	0.04	0.38

	<i>b</i>	<i>B</i>	<i>p</i>	95% CI	
				Lower	Upper
Racial/ethnic minority	0.12	0.07	0.14	-0.04	0.29
Education: BA or greater	0.34	0.19	0.00	0.18	0.49
Lesbian, gay, or bisexual	-0.10	-0.06	0.20	-0.26	0.06
Interpersonal barriers to relationship projects	-0.11	-0.19	0.00	-0.17	-0.04
Interpersonal barriers to work projects	-0.02	-0.04	0.49	-0.08	0.04
Macrosocial barriers to relationship projects	-0.08	-0.12	0.04	-0.16	0.00
Macrosocial barriers to work projects	-0.08	-0.13	0.02	-0.14	-0.01