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A Relational Model of Sexual Minority Mental and Physical Health: The Negative Effects of Shame on Relationships, Loneliness, and Health

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Abstract

Sexual minorities (e.g., lesbians, gay men, bisexual individuals) are at higher risk for mental and physical health disparities than heterosexuals, and some of these disparities relate to minority stressors such as discrimination. Yet, there is little research elucidating pathways that predict health or that promote resiliency among sexual minorities. Building on the minority stress model, the present study utilized relational cultural theory to situate sexual minority health within a relational framework. Specifically, the study tested mediators of the relationships between distal (i.e., discrimination, rejection, victimization) and proximal stressors (i.e., internalized homophobia, sexual orientation concealment) and psychological and physical distress for sexual minorities. Among 719 sexual minority adults, structural equation modeling analyses were used to test four models reflecting the mediating effects of shame, poorer relationships with a close peer and the LGBT community, and loneliness on the associations between minority stressors and psychological distress (i.e., depression and anxiety) and physical distress (i.e., distressing physical symptoms). As hypothesized, the associations between distal and proximal minority stressors and distress were mediated by shame, poorer relationships with a close peer and the LGBT community, and loneliness. Findings underscore the possible relational and interpersonal mechanisms by which sexual minority stressors lead to psychological and physical distress.

Keywords

lesbian; gay; bisexual; minority stress; shame; interpersonal relationships; mental health; physical health

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Lesbian, gay, and bisexual (LGB; i.e., sexual minorities) adults are at higher risk for mental and physical health disparities than heterosexuals (Institute of Medicine, 2011). For example, sexual minorities report more depression, anxiety, acute physical complaints, activity limitation, tension, and asthma than heterosexuals (Cochran & Mays, 2007; Conron, Mimiaga, & Landers, 2010; King et al., 2008; Sandfort, Bakker, Schellevis, & Vanwesenbeeck, 2007). The advancement of more culturally responsive interventions and research is critical to promoting the health of sexual minorities (Institute of Medicine, 2011).

Further, many mental health issues are associated with and can predict physical health complaints, and, recursively, physical health problems can predict psychological distress (Cochran & Mays, 2007). Thus, it is important to examine health holistically; yet, most research has examined the mental and physical distress of sexual minorities separately from one another. As such, we examine factors and pathways associated with sexual minorities' psychological and physical distress.

Minority Stress and Sexual Minority Health

There has been insufficient identification of factors that contribute to the health risks faced by sexual minorities. The minority stress model (Meyer, 2003) commonly has been used to understand sexual minorities' health. In addition to general adverse life experiences, this model posits that sexual minorities face unique experiences (e.g., stigma, discrimination) related to their sexual minority identity that have pernicious effects on their mental health (Meyer, 2003). The model suggests that there are distal (e.g., discrimination) and proximal (e.g., internalized homophobia) chronic and socially based stressors. Distal stressors are external, such as discrimination and victimization. Proximal stressors relate the internalization of sexual prejudice (i.e., internalized homophobia), development of expectations for distal stressful events (i.e., rejection sensitivity), and the concealment of one's sexual identity (Meyer, 2003).

There is cogent empirical evidence connecting several forms of sexual minority distress (e.g., sexual and physical victimization, microaggressions, everyday and lifetime discriminatory experiences; structural oppression) to poorer mental health (e.g., Brewster, Moradi, DeBlaere, & Velez, 2013; Hatzenbuehler et al., 2010; Mays & Cochran, 2001; Meyer, 2003; Mills et al., 2004; Szymanski & Sung, 2010) and physical health outcomes (Denton, Rostosky, & Danner, 2014; Huebner & Davis, 2007; Lewis, Derlega, Clarke, & Kuang, 2006; Mereish, 2014). Similarly, proximal stressors such as internalized homophobia and concealment are predictive of poorer mental and physical health (Lewis et al., 2006; Lehavot & Simoni, 2011; Newcomb & Mustanski, 2010; Potoczniak, Aldea, & DeBlaere, 2007; Sedlovskaya et al., 2013). However, due to the contextual complexity of the process of concealment and disclosure of sexual orientation to others, there is mixed support for the effects disclosure on health (Kuper & Fokkema, 2011), especially for sexual minorities experiencing multiple forms of oppression (Aranda et al., 2014; McGarrity & Huebner, 2014). There are also other limitations and narrow applications of the minority stress model.

The minority stress model was recently adapted to incorporate a mediational framework of general psychological processes that explain the relationship between minority stress and poor mental health (Hatzenbuehler, 2009). For instance, the internalization of stigma (i.e., proximal stress) can also be considered as a mediator of the associations between distal stress and health (Brewster et al., 2013; Hatzenbuehler, 2009). In addition, the minority stress model has not adequately taken into account general mediating psychological processes; some of the mediating processes posited and supported with some research have focused on coping and emotional regulation, social processes (e.g., support, isolation), and cognitive processes (e.g., hopelessness, expectancies; Brewster et al., 2013; Denton et al.,

2014; Hatzenbuehler, 2009). As such, more complex models attending to underlying individual and contextual factors related to both physical and mental health are needed.

Framing Health through Relational Cultural Theory

Relational cultural theory provides a complementary perspective to the minority stress model by positioning psychological distress within the context of relational and cultural disconnections (Jordan, 2009; Miller & Stiver, 1997). It assumes that all people desire connection with others and that psychological growth and development occurs through interpersonal relationships (Jordan, 2009). Although relational factors contribute to positive growth and well-being, relational and socio-cultural disconnections can be harmful to health, especially when one individual in the relationship has more power over another (Jordan, 2008, 2009), as in the case of discrimination. These concepts are quite connected to the experiences of sexual minorities, who have less social power than heterosexuals and experience stigma and discrimination at multiple levels (e.g., microaggressions, hate crimes, and lack of civil rights and protections; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010; Meyer, 2003). Additionally, experiences of disconnection lead individuals to internalize and develop relational images that guide how they relate to others and perceive themselves (Miller & Stiver, 1997). For sexual minorities, disconnection and oppression might lead them to develop self-disparaging relational images, such as internalized homophobia and concealment motivation, which can also be harmful to health (Miller & Stiver, 1997).

Chronic disconnections and self-disparaging images (i.e., distal and proximal stressors) can lead to poorer quality relationships and poorer health (Jordan, 2009). In fact, minority stress is associated with fewer social supports and loneliness (Díaz, Ayala, Bein, Henne, & Marin, 2001; Kuyper & Fokkema, 2011). Poorer social support, such as lower sense of community belonging and loneliness, is related to poorer mental and physical health among sexual minorities (Díaz et al., 2001; McLaren, 2009; Spencer & Patrick, 2009). Thus, relational disconnection and loneliness may be seen as mediators between sexual minority stressors and health outcomes. However, research has not adequately examined such mediating effects in the sexual minority health literature. Poorer social support may be associated with loneliness, which in turn may be associated with poorer health. Moreover, the literature also lacks an understanding of which factors might explain how minority stressors lead to poorer relationships and in turn loneliness.

The Deleterious Effects of Shame

Relational cultural theory posits that discriminatory relational disconnections lead to shame because shame silences, disempowers, and isolates marginalized people (Jordan, 2004; Miller & Stiver, 1997). Jordan (2004) defined shame as “a sense of unworthiness to be in connection, an absence of hope that empathic response will be forthcoming from another person” (p. 122). Shaming tactics such as discrimination enable heterosexuals to maintain power over sexual minorities; consequently, this leads sexual minorities to feel a sense of inadequacy and shame, which has negative interpersonal effects. Additionally, proximal stressors of internalized homophobia and identity concealment are related to feelings of shame (Allen & Oleson, 1999).

While some studies have considered the role of intrapersonal, social, and cognitive processes (for a review see Hatzenbuehler, 2009), few have considered the role of shame and how it may operate in predicting poorer relationships and health for sexual minorities. Conceptual and meta-analytic work has found that shame leads to poor mental health (Hartling, Rosen, Walker, & Jordan, 2004; Kim, Thibodeau, & Jorgensen, 2011) and is detrimental to physical health (e.g., increased cortisol levels; Dickerson, Gruenewald, & Kemeny, 2004; Gruenewald, Kemeny, Aziz, & Fahey, 2004; Mills, 2005). Among sexual minorities, minority stressors such as internalized homophobia and concealment are positively related to shame (Allen & Oleson, 1999; Chow & Cheng, 2010; Sherry, 2007) and other findings show that shame is related to poorer mental health (Bybee, Sullivan, Zielonka, & Moes, 2009). Although extant studies have highlighted the importance of shame, they are limited by their attention to basic associations between stressors and shame or between shame and health. Moreover, while shame may be associated with health directly, it might also have indirect associations through interpersonal and intrapersonal processes that ultimately may lead to health outcomes not considered in prior studies.

In addition to the direct associations between shame and health, the effects of shame may be mediated through interpersonal (e.g., poorer relationships) and intrapersonal processes (e.g., loneliness). Shame has negative relational effects, such as difficulty experiencing mutual and authentic connection (Hartling et al., 2004). When sexual minorities feel shameful, they might keep parts of themselves out of relationships with peers or LGBT community members out of fear of rejection or ridicule. This could lead to lack of mutuality in relationships and exacerbate disconnections. Consequently, these shame-related relational disconnections can lead to withdrawal or avoidance of people and communities and in turn loneliness. In fact, shame is negatively related to perceived social support (Chow & Cheng, 2010), and poor quality relationships are related to loneliness (Liang et al., 2002). As noted, poorer social support and loneliness are related to deleterious health outcomes (McLaren, 2009; Spencer & Patrick, 2009). Therefore, shame can have indirect associations with health through its effects on interpersonal relationships and loneliness. However, these processes have not been examined as they pertain to sexual minorities.

Purpose of Proposed Study/Research Questions

The minority stress model provides a framework to consider many processes that lead to poorer health among sexual minorities, but few studies have given detailed attention to test pathways through which they predict mental and physical health holistically. We argue that minority stress is inherently a relationally disruptive process; thus, we applied relational cultural theory in combination with the minority stress model to test a model of factors that mediate the associations between minority stressors and psychological and physical distress (see Figure 1). First, we hypothesized that distal stressors (i.e., heterosexist harassment, rejection, and discrimination) and proximal stressors (i.e., internalized homophobia and concealment) would be associated with higher levels of shame (paths A and B). These processes align with the foundational conjectures of the minority stress model (Meyer, 2003). Second, we predicted that shame would have direct negative associations with psychological and physical distress, as supported in the general literature (Dickerson et al., 2004; Kim et al., 2011; paths C and D). Third, we hypothesized that shame would have

indirect associations with psychological and physical distress through its associations with poorer quality relationships and loneliness. Specifically, we hypothesized that shame would be associated with poorer relationships with a close peer and the LGBT community (paths E and F) and in turn these poor relationships would be associated with loneliness (paths G and H) and consequently psychological and physical distress (paths I and J). Loneliness has been conceptualized to have social and emotional domains (De Jong Gierveld & Van Tilburg, 2006); thus, examining the associations between poorer relationships and loneliness and its ensuing associations with psychological and physical distress is congruent with this framework.

In addition to the aforementioned empirically based direct and indirect effects through which minority stressors are associated with psychological and physical distress (e.g., Díaz, Ayala, Bein, Henne, & Marin, 2001; Kuyper & Fokkema, 2011), we also hypothesized that minority stressors have indirect associations with poor relationships and with loneliness through shame. These hypotheses provide a more complete understanding of the complex associations between minority stressors and psychological and physical distress. Finally, given that mental and physical health are intertwined and recursively impact each other (Cochran & Mays, 2007; U.S. Surgeon General Report on Mental Health, 1999), we covaried psychological and physical distress in our model and hypothesized that they would be strongly associated.

We also tested three alternative models to address potential nuances in theory and extant research. In doing so, we compared these sequential alternative models to the best-fitting prior model to determine if the modifications resulted in substantially poorer or better fit. First, we tested a modification of our initial model by adding direct paths from distal and proximal minority stressors to psychological and physical distress; we compared this modified model to the original model to determine whether the associations between distal and proximal stressors were fully indirect through our set of mediators. Second, consistent with recent modifications of the minority stress model wherein the internalization of stigma is considered a potential mediator of the associations between distal stressors and poorer health (Hatzenbuehler, 2009), we tested whether distal stressors would be associated with proximal stressors in a directional rather than covaried manner, with the same subsequent chain of mediators in the original model (see Figure 2 for this alternative model). The third alternative model (see Figure 3) addresses an additional potential nuance in the original model related to the somatization of psychological distress. Although psychological distress and physical distress are intertwined, it is plausible that psychological distress is eventually somaticized. Therefore, we altered the covariance between psychological and physical distress in our original model to be directional (i.e., psychological distress predicted physical distress in this alternative model) and the direct association between shame and physical distress was excluded.

Method

Procedures

We recruited participants through two methods: online LGBT listservs (i.e., social groups and online networks) and an online panel of research participants. The first method included

online groups (e.g., social groups, sports groups), forums/websites, and listservs. We made intentional efforts to recruit from a diverse range of groups rather than select only from groups with an explicit support function. Internet recruitment of participants is a successful and common method to obtain broader and more representative samples (Nosek, Banaji, & Greenwald, 2002) and to reach sexual minority populations (Moradi, Mohr, Worthington, & Fassinger, 2009). For the second method, we used an online research panel of participants from Qualtrics. The database has over two million active research participants who are recruited from all over the U.S., and they opt-in to become a participant in the database. A random sample of active panelists who were existing members of this database and who met the study's criteria (i.e., over 18 years of age and identified as a sexual minority) were invited to participate.

An online data collection tool was used to collect participants' responses to the survey. Participants received instructions directing them to an online link to the survey website, at which they viewed the consent form and elected to participate in the study. Upon completing the survey, listserv participants were invited to obtain two incentives. They were invited to select an LGBTQ non-profit/charity organization to which they could have $1 donated. Listserv participants were also invited to enter into a raffle to win one of five $50 gift certificates or cash prizes for completing the survey. Online panel participants were compensated two to five dollars depending on the time spent for completing the survey; they did not participate in the two incentives provided for the listserv participants. At the end of the survey, all participants were presented with a list of online resources providing LGBTQ-specific mental health support and services. To ensure quality data, the data were screened for duplicate IP addresses but none were found. Additionally, 70 participants who identified as heterosexual on the sexual orientation demographic question were screened out of the survey (6 from the listserv sample and 64 for the online panel); 17 participants who identified as "exclusively heterosexual" on the Kinsey sexual orientation scale were also removed (3 from the listserv sample and 14 for the online panel).

Participants

Participants were 719 adults ages 18 to 91 years (M = 42.21, SD = 15.16). Participants identified as male (54.8%), female (42.3%), and transgender (2.9%). They identified their sexual orientation as gay (45.1%), bisexual (25.3%), lesbian (21.6%), queer (5.3%), unsure/questioning (1.5%), and other (1.3%). Participants were White (77%), Black/Afro-Caribbean/African American (6.4%), Hispanic/Latino/a (6.1%), Asian/Asian American or Pacific Islander (3.8%), Biracial or Multiracial (3.4%), Native American (1.4%), and other (2%). Participants lived in the following U.S. regions: Northeast (30.6%), West (19.4%), Midwest (18.4%), South (15.6%), Southwest (8.9%), Northwest (5%), or other U.S. territories (0.1%); 1.8% reported living internationally in a non-U.S. territory. They reported their education level as: some high school (1.8%), high school degree or GED equivalent (27.2%), Associate degree (15.1%), Bachelor's degree (30.8%), and Master's degree or higher (25.1%). Many participants were employed full-time (46.4%) and 62.9% had an income of $25,000 or higher.

Measures

Distal Stressors

Heterosexist harassment, rejection, and discrimination—The 14-item Heterosexist Harassment, Rejection, and Discrimination Scale (HHRDS; Szymanski, 2006) measures the frequency with which LGB individuals experienced harassment, rejection, and discrimination in the past year. The HHRDS has three subscales: Harassment and Rejection (7 items; e.g., “How many times have you been rejected by family members because you are a gay, lesbian, or bisexual person?”), Workplace and School Discrimination (4 items; e.g., “How many times have you been treated unfairly by your co-workers, fellow students, or colleagues because you are a gay, lesbian, or bisexual person?”), and Other Discrimination (3 items; e.g., “How many times have you been treated unfairly by strangers because you are a gay, lesbian, or bisexual person?”). Item response options are on a 6-point frequency scale, ranging from 1 (*the event has never happened to you*) to 6 (the event happened almost all the time [more than 70% of the time]). The scale's psychometric properties were examined and validated with sexual minority samples and studies have found associations between the scale and measures of mental health, psychological distress, and substance abuse, and high alpha reliability coefficients were found in previous samples of sexual minorities (Lehavot & Simoni, 2011; Szymanski, 2006, Szymanski & Sung, 2010). For this investigation, the Cronbach alpha reliability was .95 for the total scale, .91 for the Harassment and Rejection subscale, .90 for the workplace and School Discrimination subscale, and .87 for the Other Discrimination subscale.

Proximal Stressors

Internalized homophobia—The Revised Internalized Homophobia Scale (IHP-R; Herek, Gillis, & Cogan, 2009) assessed internalized homophobia over the past year. This 5-item scale is a shortened version of the 9-item Internalized Homophobia Scale (Martin & Dean, 1987), which was developed with a sample of gay men and was based on the third edition of the Diagnostic and Statistical Manual of Mental Disorders’ diagnostic criteria for ego-dystonic homosexuality (American Psychiatric Association, 1980). The revised items’ response options are on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*), with items such as “I wish I weren't lesbian/gay/bisexual” and “If someone offered me the chance to be completely heterosexual, I would accept the chance.” Psychometric properties have been tested with an LGB adult sample with adequate alpha reliability coefficients (Herek et al., 2009). The IHP-R has been found to predict lower self-esteem and higher depressive symptoms and state anxiety; it is also associated with sexual orientation disclosure to parents and non-family members (Herek et al., 2009). For this investigation, the Cronbach alpha reliability was .89.

Concealment motivation—The 3-item Concealment Motivation subscale of the Lesbian, Gay, and Bisexual Identity Scale (Mohr & Kendra, 2011) assessed concealment of sexual orientation over the past year. Item response options are on a 6-point Likert scale, ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Participants were asked to indicate their experience as an LGB person to three items (e.g., “I prefer to keep my same-sex romantic relationships rather private”). The measure has strong internal and test-retest reliability and

validity as the factor structure was supported with exploratory and confirmatory factor analyses; it has also been found to be highly associated with ego-dystonic homosexuality, self-concealment, and less outness (Mohr & Kendra, 2011). For this investigation, the Cronbach alpha reliability was .92.

Mediating Factors

Shame—Feelings of shame over the past year were measured with the shame subscale of the Personal Feelings Questionnaire-2 (PFQ2-Shame; Harder & Zalma, 1990), which is a modified and more robust version of the original Personal Feelings Questionnaire (Harder & Lewis, 1987). Participants were presented with 10 shame feelings (e.g., "embarrassed," "feeling ridiculous,") and response options are on a 4-point scale ranging from 0 (*never experience the feeling*) to 4 (experience the feeling continuously or almost continuously). Previous studies have reported adequate alpha reliability coefficients and high test-retest reliability with their samples (Harder & Zalma, 1990). The PFQ2-Shame is significantly correlated with self-derogation, instability of self, shyness, social anxiety, depression, and public self-consciousness (Harder, Curtler, & Rockart, 1992; Harder, Rockart, & Curtler, 1993). For this investigation, the Cronbach alpha reliability was .91.

Poorer quality relationships—Relationship quality over the past year was measured with the Relational Health Index (RHI; Liang et al., 2002; Liang et al., 2007). The RHI has indices measuring quality of relationships (i.e., mutually engaging, empowering, and authentic) with a close peer (RHI-Peer; 8 items), and community members (RHI-Community; 10 items). Item response options are on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*), including some reverse-coded items for each index. For the RHI-Peer, participants were provided with a definition of a close peer and were informed to rate the items regarding one of their closest friends. Participants were presented with:

> "The following questions pertain to your friendships with peers (excluding family members or a romantic partner) over the past year. A close friend is someone whom you feel attached to through respect, affection and/or common interests, someone you can depend on for support and who depends on you. Please answer the next questions regarding just ONE of your closest friends. (Please do not select a family member or romantic partner)."

Following this prompt, participants were presented with scale items (e.g., "even when I have difficult things to say, I can be honest and real with my friend"). For the RHI-Community scale, they completed the measure regarding the LGBT community and were presented with:

> "The following questions pertain to your lesbian, gay, bisexual, transgender, same-sex loving, and/or queer community (LGBTQ) over the past year. Next to each statement below, please indicate the number that best applies to your relationship with or involvement in this community over the past year."

Following this prompt, participants were presented with scale items (e.g., "I have a greater sense of self-worth through my connection with this community"). Factor structure and validity tests have been conducted with the indices; more specifically, confirmatory factor analyses and invariance tests among men and women were conducted and the indices were

distinct from one another and were invariant across gender (Liang et al., 2007). The RHI-Peer is positively associated with a measure of perceived social support from friendships (Liang et al., 2007); RHI-Peer and RHI-Community are negatively associated with psychological distress (Frey et al., 2004; Frey et al., 2006). High alpha reliability coefficients have been reported with samples of men and women for these two scales (Frey, Beesley, & Liang, 2009; Frey, Tobin, & Beesley, 2004; Liang et al., 2007). For this study, the Cronbach alpha reliability coefficients for peers and the LGBTQ community were .93 and .91, respectively.

Loneliness—Feelings of loneliness over the past year were measured with the 6-item short form scale of the De Jong Gierveld Loneliness Scale (De Jong Gierveld & Van Tilburg, 2006). Loneliness is considered to have social and emotional domains; thus, this scale has a social (e.g., “I miss having people around”) and an emotional (e.g., “I experience a general sense of emptiness”) loneliness subscale. Item response options are on a 5-point scale ranging from 1 (*yes!*), 3 (*more or less*), to 5 (*no!*). The scale was psychometrically validated with exploratory and confirmatory factory analyses in three studies with samples ranging from 2,945 to 7,244 participants; the scale was correlated with subjective self-report of health as well as partner status (De Jong Gierveld & Van Tilburg, 2006). More recently, the measure's psychometric properties were supported with large samples from seven different countries (De Jong Gierveld & Van Tillburg, 2010). For this study, the Cronbach alpha reliability was .82.

Health Factors

Psychological distress—The depression and anxiety subscales of the Depression, Anxiety, and Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) assess symptoms of depression and anxiety over the past year. For this study, the depression subscale (7-items; e.g., “I felt down-hearted and blue”) and anxiety subscale (7-items; e.g., “I found it difficult to relax”) were used. Item response options are on a 4-point scale ranging from 1 (*Did not apply to me at all*), to 4 (*Applied to me very much, or most of the time*). The DASS-21 was psychometrically validated with a large non-clinical sample of participants (Crawford & Henry, 2003), and studies have found support for the validity of the depression and anxiety subscales (Crawford & Henry, 2003; Lovibond & Lovibond, 1995) and among sexual minority samples (Basini & Barrett, 2007). For this study, the Cronbach alpha reliability coefficients were .86 for the depression and .94 for the anxiety subscales.

Physical distress—Participants’ distressing physical symptoms were assessed with the 33-item Cohen-Hoberman Inventory of Physical Symptoms scale (CHIPS; Cohen & Hoberman, 1983). The CHIPS assesses distressing physical symptoms on a 5-point scale, ranging from 0 (*not at all*) to 4 (*extremely*). Example items are: “back pain,” “dizziness,” “diarrhea,” and “headache.” Studies using the CHIPS with sexual minority samples have reported high alpha reliability coefficients (Denton et al., 2014; Larson & Chastain, 1990; Lewis, Derlega, Clarke, & Kuang, 2006). The CHIPS is associated with sexual minority distal and proximal stressors (i.e., discrimination, harassment, and internalized homophobia), negative mood states, stigma consciousness, social constraints, and intrusive thoughts among lesbians (Lewis et al., 2006). Self-concealment among gay men is

predictive of distressing physical symptoms, measured by the CHIPS (Larson & Chastain, 1990). For this investigation, the Cronbach alpha reliability was .95.

Results

Preliminary Analyses

The amount of missing data was small (0.82%). We imputed missing values with plausible simulated values based on the actual data in LISREL 8.80 (Jöreskog & Sörbom, 2006). This is recommended for handling missing data and preferred over list-wise deletion or mean substitution, because these latter methods can introduce statistical bias (Schafer & Graham, 2002; Schlomer, Bauman, & Card, 2010). The imputation procedure was applied at the item level and was performed for the full dataset.

Correlations—Basic correlations among all the variables are reported in Table 1 for simple descriptive purposes. The correlations are based on computed scales (e.g., internalized homophobia, shame, depression), and these should not be confounded with the latent factors in the structural model. For the most part, variables were associated in conceptually consistent directions. These patterns are explained in greater detail in the tested latent structural models.

Sampling group comparisons—We conducted a MANOVA to test whether the listserv participants differed from the online panel participants on the study's constructs of interest and age. There was a significant effect for sampling, Wilks's $\Lambda = .87$, F (13, 705) = 7.91, $p < .001$, $\eta_p^2 = .13$. To reduce the inflation of a Type 1 error, we utilized the Holm-Bonferroni adjustment of the alpha value for follow-up ANOVAs. Follow-up ANOVAs revealed significant sampling differences, although trivial in many cases based on effect sizes, on: concealment, F (1, 715) = 31.79, $p < .001$, $\eta_p^2 = .04$; internalized homophobia, F (1, 715) = 12.39, $p < .001$, $\eta_p^2 = .02$; physical distress, F (1, 715) = 11.54, $p < .01$, $\eta_p^2 = .02$; anxiety, F (1, 715) = 10.55, $p < .05$, $\eta_p^2 = .01$; poorer quality relationships with a close peer, F (1, 715) = 9.26, $p < .05$, $\eta_p^2 = .01$; and workplace and school discrimination subscale of the HHRDS, F (1, 715) = 7.80, $p < .05$, $\eta_p^2 = .01$. The online panel participants reported higher scores on concealment ($d = .42$), internalized homophobia ($d = .26$), physical distress ($d = .25$), anxiety ($d = .24$), workplace and school discrimination ($d = .22$), and poorer quality relationships with a close peer ($d = .23$) than the listserv sample's participants. Given that the effects sizes are mostly in the small range, the sample was combined for remaining analyses.

Testing the Proposed Model and Alternative Models

We used AMOS 20.0 (Arbuckle, 2011) for structural equation modeling (SEM) to test the measurement model and the structural models. We used several fit indices to assess whether each model was a good fit to the data: root-mean-square error of approximation (RMSEA), incremental fit (IFI), comparative fit (CFI), and non-normed fit (NNFI) indices. Values above .90 for the IFI, CFI, and NNFI are considered good model fit (Kline, 1998; Schumacker & Lomax, 2010). RMSEA values of .06 or below, or between .05 to .08 or

below, indicate good model fit (Hu & Bentler, 1999; Schumacker & Lomax, 2010). The chi-square statistic was not considered for model fit because researchers have asserted many limitations and discrepancies with it, especially with larger samples (Cheung & Rensvold, 2002; Tomarken & Waller, 2003); however, we utilize the chi-square statistic for to examine chi-square changes for the nested comparisons of our alternative models.

Model specification—The distal stressors factor was composed of three indicators: harassment/rejection, work/school place discrimination, and other discrimination. The proximal stressors factor was composed of two indicators: internalized homophobia and sexual orientation concealment motivation. The psychological distress factor was composed of two indicators: anxiety and depression. Three parcels per factor were computed and used as indicators for the remaining latent factors (i.e., physical distress, shame, loneliness, and poorer relationships with a close peer and the LGBTQ community). Parcels can improve reliability and minimize potential violations of assumptions of multivariate normality (Coffman & MacCallum, 2005; Little, Cunningham, Shahar, & Widaman, 2009). We computed parcels using the item-to-construct balance technique (Little et al., 2009), such that items with the highest and lowest factor loadings were evenly distributed across the three parcels of each construct.

Due to the wide age range in our sample, we included age as an observed indicator in the measurement model and controlled for age and its association with all the factors in the structural models. In our measurement and structural models, each observed indicator was constrained to load only on its respective latent factor. For the measurement model, all the covariances among factors were free to be estimated; however, the measurement errors were not allowed to correlate. For our proposed structural model, the covariance between the two minority stress factors was free to be estimated. Finally, some methodologists have suggested that covarying endogenous variables in some statistical software is not permitted; however, covarying their residuals is permitted if a correlation is desired between endogenous variables (Kenny, 2011). Therefore, in the structural model, the residuals of the endogenous health factors were allowed to covary with each other to represent the conceptual and empirical association between our psychological and physical distress variables in the proposed model (Figure 1) and the first alternative model (Figure 2).

Once we ran the models, the two largest modification indices suggested to covary the residuals between poor relationships with a close peer and poor relationships with the LGBT community, and to covary the residuals between shame and loneliness. However, based on the conceptual and theoretical nature of the models and their acceptable fit without these modifications, we did not incorporate these modifications.

Bootstrapping—We used bootstrapping procedures to obtain indirect effect estimates and because this resampling procedure is optimal, effective, and recommended for handling non-normally distributed data (Chernick, 1999; MacKinnon, Lockwood, & Williams, 2004). Bias-corrected bootstrapping is also relatively best compared to other bootstrapping techniques and it offers greater statistical power and precision (MacKinnon et al., 2004; Mallinckrodt, Abraham, Wei, & Russell, 2006). We used the bias-corrected bootstrapping procedure with 95% confidence intervals for 1000 samples from the original dataset.

Model results—The measurement model was a good fit to the data (IFI = .96; CFI = .96; NNFI = .95; RMSEA = .062 [.057, .067]). The proposed model had an adequate fit to the data (IFI = .93; CFI = .93; NNFI = .92; RMSEA = .077 [.073, .082]). As hypothesized and reported in Figure 1 and while controlling for age, our proposed model indicated that both distal and proximal stressors were associated with higher levels of shame. Shame was associated with poorer relationships with a close peer and the LGBTQ community, and had strong direct associations with psychological distress and physical distress. Poorer relationships were associated with higher levels of loneliness, and loneliness was associated with psychological and physical distress. Finally, the indirect associations of distal and proximal minority stressors with psychological and physical distress through the mediators were significant (Table 3). Further, minority stressors had significant indirect associations with poorer relationships through shame. Minority stressors also had significant indirect associations with loneliness through shame and poorer relationships. Finally, shame had significant indirect associations with loneliness, and psychological and physical distress.

To more rigorously test our mediation results, we also tested a modification of our proposed model to include the direct paths from distal and proximal stressors to psychological and physical distress. This model had an adequate fit to the data (IFI = .93; CFI = .93; NNFI = .92; RMSEA = .076 [.072, .081]. The direct paths from distal stressors to psychological and physical distress were significant (β = .21 and .23, respectively, $p < .001$); however, the direct paths from proximal stressors to psychological and physical distress were not significant. We conducted nested comparisons to test for significant differences between the proposed model and modified model. The chi-square change between our proposed model (χ^2 = 1112.74, df = 211) and the modified model (χ^2 = 1071.35, df = 207) was not significantly different in fit ($p > .05$). As such, we retained our proposed model for parsimony.

We then tested the alternative model in which there was a directional association from distal to proximal stressors rather than a covariance between these factors and in which the association between distal stressors and shame was entirely indirect through proximal stressors (Figure 2). We found the model to have an adequate fit to the data (Alternative model 1: IFI = .93; CFI = .93; NNFI = .91; RMSEA = .079 [.075, .084]). Consistent with the mediating pathways found in the proposed model, this alternative model indicated that proximal stressors mediated the relationship between distal stressors and shame (Figure 2). For this alternative model, all of the indirect effects were significant and in similar directions to the proposed original model (Table 4). We also compared this alternative model (χ^2 = 1166.14, df = 212) with our proposed model (χ^2 = 1112.74, df = 211) and found no significant difference in fit between the two models ($p > .05$). As both models were similar, we retained this alternative model for parsimony.

Next, we tested the alternative model in which there was a directional association from psychological distress to physical distress and in which the association between shame and physical distress was entirely indirect through psychological distress (Figure 3). We found the model to have an adequate fit to the data (Alternative model 2: IFI = .93; CFI = .92; NNFI = .91; RMSEA = .080 [.075, .084]). This alternative model indicated that the path from psychologicaldistress to physical distress was significant (Figure 3). All of the indirect

associations of this model were significant and in similar directions to the previous models (Table 5). We also compared this alternative model (χ^2 = 1194.23, df = 214) with the previous alternative model (χ^2 = 1166.14, df = 212) and found no significant differences between the two models ($p > .05$).

Discussion

There is a dearth of research elucidating the factors that contribute to sexual minorities' health concerns. To address these limitations and to extend the minority stress model (Meyer, 2003), we applied relational cultural theory (Jordan, 2009; Miller & Stiver, 1997) to consider a relational framework to sexual minority health. As documented in our models, our results provide support for several theoretically informed relational processes that could contribute to psychological and physical distress.

We tested multiple models that have implications for theory and future research. We first note that we found no statistically significant differences in fit between our models based on chi-square nested comparisons, and there were overall similarities in other fit indices across the models. We found support for the recent modification of the minority stress model (Hatzenbuehler, 2009), in which proximal stressors mediated the relationship between distal stressors and health outcomes and distal stressors and shame. Although our alternative models showed greater parsimony without sacrificing goodness of fit, it is also imperative to recognize that the distal stressors did have direct associations with mental and physical distress as well as shame. Thus, consistent with relational cultural theory (Jordan, 2004; Miller & Stiver, 1997), some specific and insidious forms of distal stressors (e.g., victimization) may still have direct and immediate associations with shame and health in a way that is independent of an individual's internalization of these particular experiences. Finally, our last alternative model points to potential somatization experiences of psychological distress. Given that all of our models demonstrated similar goodness of fit, more research, particularly longitudinal in nature, is needed to better understand the directional nature of some of these associations. Nonetheless, we discuss in more detail below the associations among our constructs, their connection to theory, and focus on commonalities across these models as well as unique contributions from each model.

Minority Stressors Psychologically and Physically Hurt

Consistent with the minority stress model and relational cultural theory, both distal and proximal stressors were associated with psychological distress indirectly through several intrapersonal and interpersonal pathways. This finding is consistent with and expands the empirical literature on minority stress and mental health (e.g., Hatzenbuehler, 2009; Meyer, 2003). The results of this study are among the few to demonstrate the harmful effects of these multiple minority stressors on psychological distress while also testing mediated pathways for these effects. The results of our alternative models support the modification of the minority stress model (Hatzenbuehler, 2009) to consider the potential mediating effect of proximal stressors on the associations between distal stressors and psychological and physical distress.

These results also extend the minority stress model and the focus of relational cultural theory on mental health to a broader assessment of health indices that includes physical health symptoms. These findings are consistent with the emerging yet limited literature documenting the associations between minority stressors and self-reported distressing physical symptoms (Cole et al., 1996; Denton et al., 2014; Huebner & Davis, 2007; Lewis et al., 2006). These results are also congruent with recent neuroscience research documenting that relational disconnections (e.g., exclusion, rejection) are experienced in the same neural brain regions as physical pain (Eisenberger, 2012).

The findings accentuate the intertwined relationship between mental and physical health. Mental and physical health have long been conceptualized as inseparable (U.S. Surgeon General Report on Mental Health, 1999) and have recursive effects on each other (Cochran & Mays, 2007). As we later note, the mediating results demonstrate that both distal and proximal stressors had similar associations with psychological and physical distress through similar pathways. This further echoes the importance of examining both mental and physical health factors in research.

Mediating Pathways to Psychological and Physical Distress

Shame has several pernicious relational and health effects (Hartling et al., 2004). We hypothesized that shame would be a central mechanism through which minority stressors had a negative association with health. Our results indicate that the effects of proximal and distal stressors on psychological and physical distress were mediated through feelings of shame as well as through the indirect associations of shame with poorer relationships and feelings of loneliness. These findings suggest that attention to the effects of minority stressors on shame and in turn relational dynamics is critical in order to understand the process by which minority stressors might affect health. Furthermore, these findings build on the minority stress model by indicating other less considered pathways by which minority stressors might predict distress.

Based on the mediation results, minority stressors appear to be associated with psychological and physical distress domains through shame. We found that minority stressors are associated with greater feelings of shame. Limited findings show that minority stressors are related to shame (Allen & Oleson, 1999; Sherry, 2007). The current results extend this to show why this is so critical, in that shame can have negative effects directly on health and also on one's social relationships, which also lead to poorer health. This study connects these areas of research by demonstrating that shame is a potential mediating mechanism that explains how minority stressors are related to compromised health. This underscores the need to consider the negative effects of shame in future research and clinical interventions.

Relational cultural theory posits that feelings of shame have immobilizing effects on relationships, which can be psychologically debilitating (Hartling et al., 2004; Jordan, 2004). In addition to acting as a single and direct mediator between minority stressors and distress, we found that shame also was associated with distress through its negative association with individual and community relationships. Shame leads individuals to feel unworthy in relationships (Jordan, 2004, 2009). This is especially harmful to sexual minorities because

they are already a marginalized group and social supports are particularly important factors related to health (McLaren, 2009; McLaren et al., 2007). Experiencing internalized oppression is related to feelings of shame, which can lead sexual minorities to feel unworthy of relationships and to experience relationships with peers and the LGBTQ community that lack empathy, authenticity, and mutuality (Jordan, 2004). Our results suggest that when these shameful feelings are experienced and internalized, they have negative health associations through feelings of loneliness. Feelings of loneliness are particularly deleterious for sexual minorities because not only might they feel lonely in their overall heterosexist context, but they also may feel isolated from their peers and the LGBTQ community, a typical source of coping and resilience. Our findings are consistent with the limited work identifying associations between shame and diminished social support (Chow & Cheng, 2010), poorer quality relationships and loneliness (Liang et al., 2002), as well as loneliness and health (Díaz et al., 2001; Spencer & Patrick, 2009). We built on these findings and found support for a mediating process that accentuates how, through shame, minority stressors can be relationally disruptive and have negative health effects.

Limitations and Strengths

We note several limitations to our current study. First, the study is limited by its cross-sectional design. Although our models are based on two established theories, longitudinal research would provide stronger evidence for the mediated pathways we tested and for the directionality of their effects. Longitudinal data would be especially useful for better differentiating the best sequence of our factors as portrayed across the models we tested. Second, we aggregated lesbian, gay, bisexual, queer, and “other” participants into one sample of sexual minorities. Although we were interested in the overall experience among sexual minorities, future research should examine whether our models apply equally across specific groups within the sexual minority community. These groups have unique experiences with stressors (e.g., bisexual individuals experience biphobia) as well as their own unique health risks (e.g., lesbians have higher rates of obesity; Boehmer et al., 2007); therefore, future research should examine these nuances as they apply to our models. Third, the sample was predominately White; thus, the study's generalizability to sexual minorities of color may be limited. Research is greatly needed to examine the complexity of multiple intersecting minority identities (e.g., race, sexual orientation) in relation to our findings, especially because sexual minorities of color may face additional stressors (e.g., racism) in connecting with a predominately White LGBT community.

There are also some limitations to our measurement of some of the constructs. By necessity, we relied on participants’ self-reported physical distress, which might not be as accurate an assessment as would an assessment reported by a medical doctor. Objective measures of health (e.g., physiological measures such as cortisol level) would be an important extension to this study by including such measures as part of the general model that we tested. Furthermore, some distal stressors are more subtle and nuanced (e.g., microaggressions) than the overt forms that we measured in the present study. Most participants in this study did not report high frequencies of distal stressors over the past year (although variability in the levels reported was associated in anticipated ways with our health outcomes). Future research might include subtler assessments of discrimination and whether these, too, predict

health outcomes through a similar process of shame, relational disconnections, and loneliness. Moreover, we only examined two types of proximal stressors in this study; future research should consider assessing rejection sensitivity expectations of stigma as an additional proximal stressor (Hatzenbeuhler, 2009; Meyer, 2003). We also used a concealment motivation scale as a measure of concealment. Although concealment motivation is highly related to concealment and less outness (Mohr & Kendra, 2011), a more direct measure of concealment stress is needed to more appropriately test the minority stress model. Finally, we asked participants to consider their relationship with only one close peer, who was not a romantic partner or family member; for some participants this peer may have been part of the LGBT community, which might have produced some overlap with our measure of LGBT community relationships. However, it is important to note that the correlation between these two measures was not very large.

We also note several strengths. We developed and tested novel models that bridged two existing theories, minority stress and relational cultural theory, to better understand the processes by which minority stressors relate to psychological and physical distress. We addressed limitations of prior research by including several minority stressors and multiple indicators of distress in our model. Using SEM among a large sample of sexual minorities, our more comprehensive model illuminated several complex and nuanced pathways that have research, practice, and policy implications.

Implications for Research and Practice

This study highlights several directions for future research in addition to those mentioned previously. Our results focused on the unique associations of two types of relationships (a close peer and the LGBT community). Additional research is needed to examine even greater nuance in these relationships (e.g., relationships with heterosexual and LGBT peers), as well as the role of other types of relationships (e.g., romantic partners) in how they contribute to mental and physical health.

There is a dearth of evidence-based, culturally-informed treatments that address the unique health needs of sexual minorities (IOM, 2011). By utilizing relational cultural theory within the traditional minority stress model, our findings are more translatable to interventions and relatable to practitioners because it positions the results within a clinical practice framework. They inform more sensitive practices of relational cultural theory with sexual minorities. More specifically, the results of this study highlight important areas for assessment and intervention. The findings accentuate the importance of assessing clients' experiences with distal and proximal minority stressors. As demonstrated in the results, practitioners must assess not only for psychological distress but also for physical distress. Similarly, clinicians must take into consideration their patients' experiences with oppression as a potential source of their health symptoms.

Furthermore, our study suggests several points of clinical intervention related to feelings of shame and loneliness. Practitioners who work with sexual minority clients who have experienced chronic distal and/or proximal minority stressors must also understand the role of social connections and shame in their client's treatment. Clinicians must work with their clients to process feelings of shame, to feel comfortable with vulnerability and authenticity

in their relationships, and to identify strategies for developing meaningful relationships. They can also help encourage their clients to build quality relationships in order to minimize feelings of loneliness. Consistent with relational cultural theory's focus on individual and cultural forms of disconnection, practitioners must also help their clients' to contextualize their feelings and experiences within a sociocultural framework of oppression, power, and privilege.

According to relational cultural theory, all people must work beyond personal relational pain and move toward a larger social change approach (Jordan, 2004; Miller & Stiver, 1997). Within this framework, researchers and practitioners need to addresses and advocate against societal forces contributing to relational disconnections and to empower their participants and clients to do the same. As evidenced in the study's findings demonstrating the negative relationship between sexual minority stressors and health, psychologists need to advocate for sexual minority health policies and research. They must also intervene and combat heterosexism and sexual prejudice on all societal levels in order to create a more socially just and relationally connected society.

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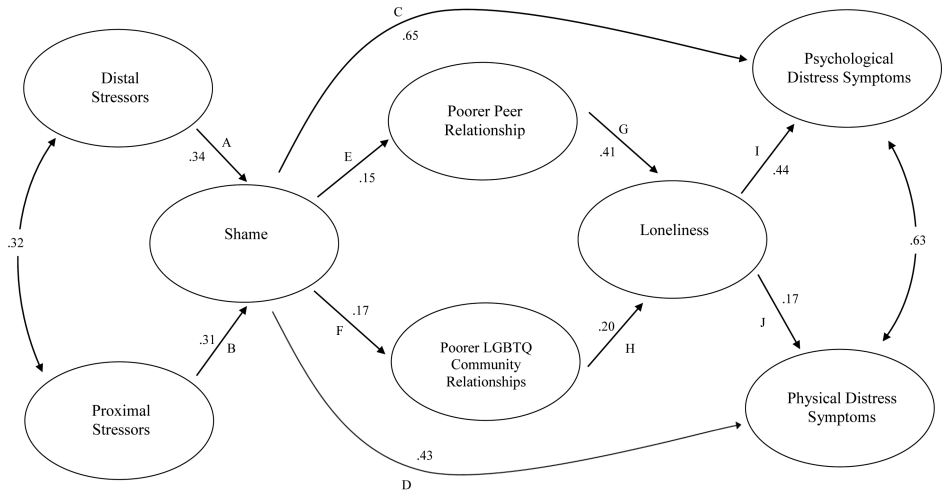
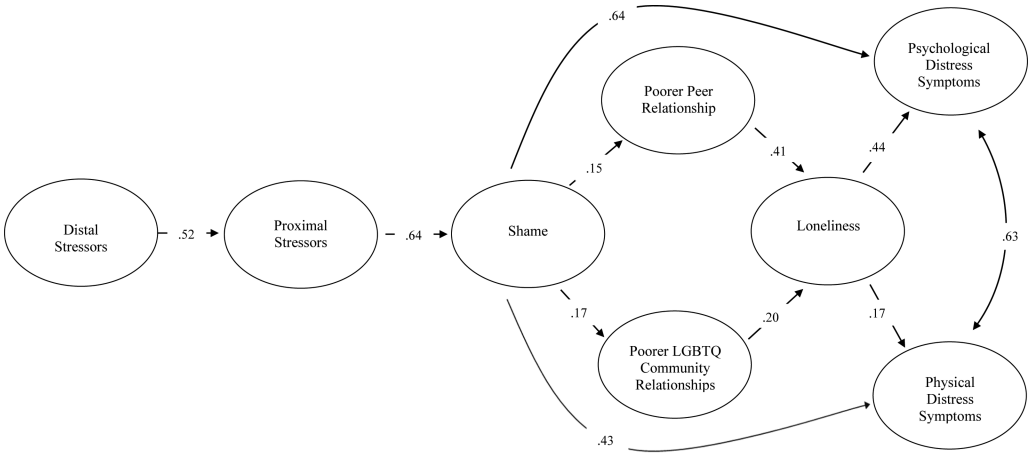


Note. The model controlled for age. All coefficients are significant at $p < .001$.

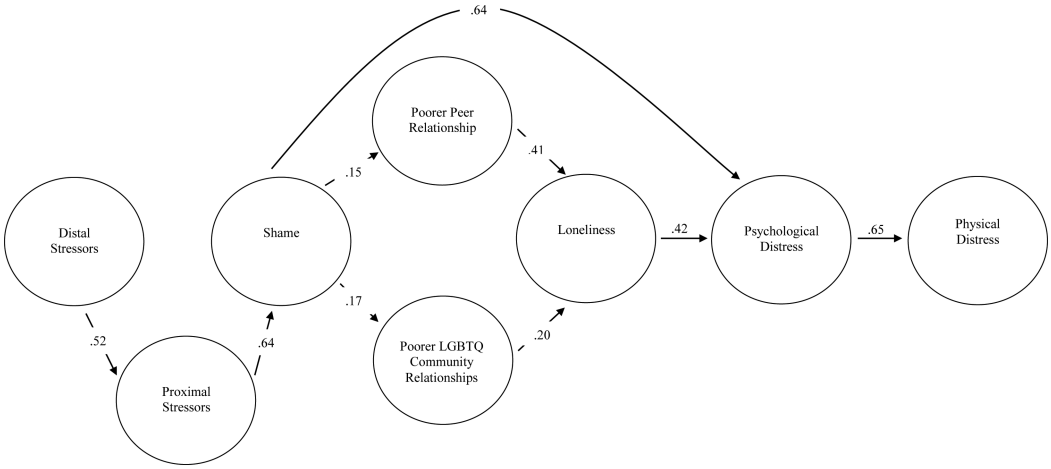
Figure 1.

Proposed model: A relational mediation model of sexual minority psychological and physical distress.



Note. The model controlled for age. All coefficients are significant at $p < .001$.

Figure 2.
Alternative model incorporating proximal stressors' mediating effects.



Note. The model controlled for age. All coefficients are significant at $p < .001$.

Figure 3.
Alternative model incorporating potential somatization effect of mental distress.

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Table 1

Correlations among the Exogenous, Endogenous, and Mediation Variables

	Harass/Reject	W/S Discrim	Other Discrim	Internal. Homoph	Conceal	Dep	Anx	Phys. Distress	Shame	Lonely	Peer	Comm
Harass/Reject	--											
W/S Discrim	.76**	--										
Other Discrim	.76**	.81**	--									
Internalized Homophobia	.31**	.30**	.24**	--								
Concealment	.14**	.10**	.02	.40**	--							
Depression	.41**	.32**	.30**	.26**	.17**	--						
Anxiety	.49**	.42**	.41**	.34**	.13**	.73**	--					
Physical Distress	.38**	.33**	.36**	.22**	.04	.55**	.67**	--				
Shame	.48**	.38**	.38**	.39**	.25**	.65**	.66**	.48**	--			
Loneliness	.28**	.20**	.17**	.23**	.25**	.67**	.48**	.36**	.52**	--		
Peer	−.01	.03	−.01	.13**	.18**	.20**	.12**	.09*	.08*	.40**	--	
Community	−.06	−.03	−.07*	.10**	.17**	.19**	.09*	.09*	.11**	.30**	.38**	--

Note. Harass/Reject = harassment and rejection; W/S Discrim = workplace and school discrimination; Other Discrim = other types of discrimination; Internal. Homoph. = internalized homophobia; Conceal = sexual orientation concealment; Dep = depression; Anx = anxiety; Phys. Distress = physical distress; Lonely = feelings of loneliness; Peer = Poorer peer relationship; Comm = poorer community relationship.

* $p < .05$.

** $p < .01$.

Table 2

Basic Group Differences on Account of Sampling Method

Measure	*F* (df)	η_p^2	Listserv (L) *n* = 343	Panel (P) *n* = 376	Results
Age	6.01 (1, 717)	.01	40.77 (15.28)	43.53 (14.94)	---
Harassment/Rejection	0.59 (1, 717)	.00	1.69 (0.78)	1.75 (1.07)	---
Work/School Discrimination	7.80 (1, 717)*	.01	1.35 (0.61)	1.53 (0.99)	L < P
Other Discrimination	0.37 (1, 717)	.00	1.65 (0.73)	1.69 (1.05)	---
Internalized Homophobia	12.39 (1, 717)***	.02	1.47 (0.72)	1.70 (0.95)	L < P
Concealment	31.79 (1, 717)***	.04	3.24 (1.52)	3.90 (1.60)	L < P
Depression	2.61 (1, 717)	.00	1.79 (0.73)	1.89 (0.87)	---
Anxiety	10.55 (1, 717)*	.01	1.51(0.51)	1.66 (0.72)	L < P
Physical Distress	11.54 (1, 717)*	.02	59.24 (18.53)	64.94 (25.58)	L < P
Shame	0.94 (1, 717)	.00	1.90 (0.60)	1.85 (0.73)	---
Loneliness	4.39 (1, 717)	.01	2.57 (0.99)	2.72 (1.00)	---
Peer	9.26 (1, 717)*	.01	2.08 (0.75)	2.27 (0.92)	L < P
Community	7.09 (1, 717)	.01	2.83 (0.77)	2.99 (0.85)	---

Note. L = listserv sample; P = panel sample. Follow-up ANOVAs are based on Holm-Bonferonni corrections. Standard deviations are provided in parentheses.

** $p < .01$

* $p < .05$

*** $p < .001$

Table 3

Total Indirect Effects Estimates for the Proposed Model

Total Indirect Effects:	Standardized Values (95% Confidence Interval)
Effect of Distal Stressors on:	
Psychological Distress	.24 (.158, .317)**
Physical Distress	.15 (.095, .213)**
Loneliness	.03 (.015, .058)**
Poorer Peer Relationship	.05 (.021, .090)**
Poorer LGBT Community Relationship	.06 (.027, .096)**
Effect of Proximal Stressors on:	
Psychological Distress	.22 (.121, .307)**
Physical Distress	.14 (.078, .207)**
Loneliness	.03 (.011, .057)**
Poorer Peer Relationship	.05 (.015, .092)**
Poorer LGBT Community Relationship	.05 (.020, .100)**
Effect of Shame on:	
Psychological Distress	.04 (.019, .072)**
Physical Distress	.02 (.006, .033)**
Loneliness	.10 (.043, .155)**

Note. Bootstrapping procedures were conducted on 1,000 generated samples to test the significance of the indirect effects. The standardized bias-corrected bootstrap indirect effects and their respective confidence intervals are reported in this table. Values in parentheses are the upper and lower bounds of the 95% confidence interval

* $p < .05$.

** $p < .01$.

Table 4

Total Indirect Effects Estimates for the Alternative Model in Figure 2

Total Indirect Effects:	Standardized Values (95% Confidence Interval)
Effect of Distal Stressors on:	
Psychological Distress	.23 (.089, .329)**
Physical Distress	.15 (.059, .224)**
Shame	.33 (.130, .458)**
Loneliness	.03 (.013, .060)**
Poorer Peer Relationship	.05 (.018, .096)**
Poorer LGBT Community Relationships	.06 (.023, .104)**
Effect of Proximal Stressors on:	
Psychological Distress	.44 (.292, .567)**
Physical Distress	.28 (.179, .377)**
Loneliness	.06 (.027, .109)**
Poorer Peer Relationship	.10 (.035, .170)**
Poorer LGBT Community Relationships	.12 (.052, .186)**
Effect of Shame on:	
Psychological Distress	.04 (.020, .074)**
Physical Distress	.02 (.007, .034)**
Loneliness	.10 (.047, .158)**

Note. Bootstrapping procedures were conducted on 1,000 generated samples to test the significance of the indirect effects. The standardized bias-corrected bootstrap indirect effects and their respective confidence intervals are reported in this table. Values in parentheses are the upper and lower bounds of the 95% confidence interval

* $p < .05$.

** $p < .01$.

Table 5

Total Indirect Effects Estimates for the Alternative Model in Figure 3

Total Indirect Effects:	**Standardized Values (95% Confidence Interval)**
Effect of Distal Stressors on:	
Psychological Distress	.22 (.088, .328)**
Physical Distress	.15 (.057, .222)**
Shame	.33 (.130, .457)**
Loneliness	.03 (.013, .061)**
Poorer Peer Relationship	.05 (.018, .097)**
Poorer LGBT Community Relationships	.06 (.023, .104)**
Effect of Proximal Stressors on:	
Psychological Distress	.43 (.283, .558)**
Physical Distress	.28 (.182, .374)**
Loneliness	.06 (.028, .110)**
Poorer Peer Relationship	.10 (.036, .170)**
Poorer LGBT Community Relationships	.11 (.053, .188)**
Effect of Shame on:	
Psychological Distress	.04 (.020, .074)**
Physical Distress	.44 (.344, .515)**
Loneliness	.10 (.047, .158)**

Note. Bootstrapping procedures were conducted on 1,000 generated samples to test the significance of the indirect effects. The standardized bias-corrected bootstrap indirect effects and their respective confidence intervals are reported in this table. Values in parentheses are the upper and lower bounds of the 95% confidence interval

* $p < .05$.

** $p < .01$