Measuring a New Stress Domain:

Validation of the Couple-Level Minority Stress Scale (CLMS)

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ABSTRACT

Existing social stress frameworks largely conceive of stress as emanating from individual experience. Recent theory and research concerning minority stress has focused on same-sex couples' experiences of both eventful and chronic stressors associated with being in a stigmatized relationship, including having ongoing or episodic fears of discrimination, and experiencing actual acts of discrimination. Such couple-level minority stressors represent a novel domain of social stress affecting minority populations that is only beginning to become a focus in empirical investigations testing minority stress theory. This paper presents the results of psychometric analyses of dyadic data from 106 same-sex couples from across the U.S., introducing the Couple-Level Minority Stress (CLMS) scale featuring eight new couple-level minority stress factors: (1) Couple-Level Stigma; (2) Couple-Level Discrimination; (3) Seeking Safety as a Couple; (4) Perceived Unequal Relationship Recognition; (5) Couple-Level Visibility; (6) Managing Stereotypes about Same-Sex Couples; (7) Lack of Integration with Families of Origin; and (8) Lack of Social Support for Couples. The CLMS demonstrates a clear factor structure with satisfactory model-data fit and subscale reliabilities. The CLMS also exhibits validity as a correlate of one indicator of relationship quality (relationship satisfaction) and three indicators of mental health (nonspecific psychological distress, depressive symptomatology, and problematic drinking) when controlling for individual-level minority stressors and has great potential to extend and enrich minority stress research, particularly studies that deepen understandings of longstanding health inequities based on sexual orientation.

Keywords: Minority stress, couples, couple-level, same gender, same sex, scale, validation, stigma

In the classic presentation of minority stress theory, sexual minority individuals are viewed as potentially vulnerable to unique stressors, including: (1) experiences of discrimination (both acute events and chronic everyday mistreatment); (2) stigma or expectations of rejection; (3) concealment of a stigmatized identity; and (4) internalization of negative social beliefs about one's social groups or social identity (Meyer, 2003). Such stressors, derived in part from Goffman's classic works on stigma and impression management (1963; 1969) are generally understood at the level of individual experience. Stressors most distal to the self are objective stressors based primarily in the environment, such as prevailing stereotypes, prejudice, and discrimination. These lead to more proximal appraisals of the environment as threatening, and to expectations of rejection (*feeling stigmatized*), as well as efforts to conceal or hide stigmatized identities (*managing others' impressions*). Most proximal to the self is one's internalization of negative social attitudes toward one's minority group (e.g., internalized homophobia).

However, when individuals become part of a same-sex couple, they may then become vulnerable to unique couple-level minority stressors that are not reducible to their experiences as sexual minority individuals. Like individual-level minority stressors, couple-level minority stressors may be experienced by – and assessed among – individuals in same-sex relationships. In other words, when their intimate relationships are devalued or diminished by society, sexual minority individuals may face hardships or adversity as a result. They may also face such challenges together – as couples – *because their relationship represents a stigmatized relationship form.* The stigmatization of a relationship form (i.e., same-sex couples) is the source of this domain of minority stress, which is only beginning to be empirically examined (LeBlanc, Frost, & Wight, 2015; Frost, LeBlanc, de Vries, Alston-Stepnitz, Stephenson, & Woodyatt, 2017). The current study reports the development, testing, and validation of a new, multi-

dimensional measure of couple-level minority stress, the Couple-Level Minority Stress Scale (hereafter abbreviated as CLMS).

Distinguishing between individual- and couple-level sources of social stress allows for deeper understandings of stress experiences, as well as of how stress can be shared among individuals in the context of their intimate relationships (LeBlanc, et al., 2015; Frost, et al., 2017). Individual-level minority stress emanates from society's stigmatization of the individual (e.g., as a gay man), while couple-level minority stress emanates from society's stigmatization of one's relationship, in and of itself (e.g., as two women in same-sex legal marriage). Although stress frameworks have largely conceived of stress as emanating from individual experience, the reality that stress is typically shared in relational contexts has long been apparent and examined in studies of stress processes (Pearlin, 1999; Pearlin & Bierman, 2013) that are shared by individuals whose lives become "linked" over time in enduring ways (Elder, Johnson, & Crosnoe, 2003). Studies of stress processes have demonstrated conditions under which stress expands and creates more stress, within an individual's life, as well as between persons whose lives are structurally intertwined (e.g., Bolger, DeLongis, Kessler, & Wethington, 1989; Grzywacz, Almeida, & McDonald, 2002; Young, Schieman, & Milkie, 2014; Pearlin, Aneshensel, & LeBlanc, 1997; Wight, Aneshensel, LeBlanc, & Beals, 2008).

More directly relevant to our research aims, a small research literature has begun to examine relationship marginalization (Lehmiller & Agnew, 2006; 2007) and relationship stigma (Gamarel, Reisner, Laurenceau, Nemoto, & Operario, 2014; Rosenthal & Starks, 2015), linking both to relationship quality and partner well-being. Collectively, such studies have focused on same-sex, interracial, age-gap, and relationships where one partner is transgender, all relationship forms stigmatized by society at large, leading to unique stressors for the people in

them. Because these stressors stem from the stigmatization of relationships, they have been described as new domain of minority stress. Our overarching goal is to more clearly and fully articulate this construct of couple-level minority stress, as distinguished from individual-level minority stress, with the hopes of bolstering future research focusing on how individuals in same-sex relationships are both individually and jointly affected by this societal-level stigma. Beyond the explicit recognition of the direct influences of couple-level minority stress on relationship quality and partner well-being, this work also highlights the importance of considering how these couple-level minority stressors may be associated with stressors from other domains of life (e.g., more generally experienced stressors such as relationship conflict), as well as how they can become part of dyadic stress processes between partners in same-sex relationships (e.g., stress contagion and stress discrepancies) (LeBlanc, et al., 2015; Frost, et al., 2017).

Given that the disproportionate mental health burden faced by sexual minority populations (IOM, 2011) is in part attributable to the mental health effects of minority stress (Mays & Cochran, 2001; Meyer, 1995; Meyer, 2003), there is great potential in broadening the minority stress universe to include a more refined focus on the relational context of minority stress, ultimately deepening existing understandings of how minority stress may diminish relationship quality and partner well-being.

Methods

Sample Recruitment and Description

Data were collected using a online, dyadic survey of 106 same-sex couples living in the U.S. Eligibility criteria for participation were: (1) both partners were at least 21 years of age; (2) both individuals must have perceived of themselves to be in a romantic relationship with the

other (i.e., forming a couple); and (3) at some point in their shared history, they must have been engaged in a sexual relationship with one another. Transgender individuals were not included in recognition of the unique stressors that they face (Hendricks & Testa, 2012). We did not limit inclusion to couples who cohabit, or to those who had registered as domestic partners or were married in a symbolic, religious, or legal ceremony, because we wished to include a range of relationship types across a variety of legal statuses.

Participants in the study were recruited through a modified targeted nonprobability Internet-based recruitment strategy (Meyer, Schwartz, & Frost, 2008; Meyer & Wilson, 2009) to complete the survey online. We began by identifying a diverse array of online venue types from across the United States. Recruitment venues were identified through systematic Google searches designed to identify LGBT-oriented online communities (e.g., social/leisure/sports groups) and organizations with an online presence (e.g., LGBT centers). Our outreach to these venues included online communications via messaging through social media and e-mail communications with organizational representatives. As potential participants began to complete a brief eligibility survey through such venues, we began to selectively fill "recruitment cells" to ensure sample diversity (e.g., by gender, relationship duration, region of the country, and recruitment venue type), as detailed elsewhere (LeBlanc, Frost, & Bowen, 2018).

Once both partners were determine to be eligible, each was subsequently invited *individually* complete the full survey after providing online consent. As part of completing the brief eligibility survey, each partner provided their partner's name and contact information, which allowed us to contact those partners (with permission) and encourage them to also participate as well in instances where they did not complete the eligibility survey independently. No couples were eligible to participate in the study before both couples completed the eligibility

survey. The full survey required about 45 minutes for completion and each partner was electronically sent a $30 Amazon gift card for completing it. Both the brief eligibility survey and the full survey were programmed using Qualtrics software. These procedures were reviewed and approved by the Institutional Review Board at San Francisco State University. The first full survey was completed on July 21, 2015 and the final one was completed on January 21, 2016.

Precautions were taken to minimize fraudulent participation in online surveys (Bauermeister, Pingel, Zimmerman, Couper, Carballo-Dieguez, & Strecher, 2013). After completing the brief eligibility survey, all potentially eligible participants were then sent an e-mail invitation containing a unique survey link to complete the full survey. This full survey link could only be used by the recipient of this e-mail, which helped to ensure the validity of e-mail addresses given in the eligibility survey. Also, IP addresses for persons responding to the full survey were then compared with the zip code and state they listed in the eligibility survey to make sure those match, and searches for the identification of IP addresses from which more than two surveys – one for each partner – originated were also conducted. In addition, it was required that the eligibility survey be completed by each partner, and consequently their responses could then be compared to identify differences between partners in data describing their relationship. Finally, some questions from the eligibility survey are repeated in the full survey, allowing for the identification of additional data inconsistencies for individuals across the two surveys.

To ensure diversity within the sample – beyond the basic eligibility criteria to establish that the two partners were at least 21 years of age and constituted a couple – we sought roughly equal distribution by couple gender and relationship duration (across three categories [6 months to < 3 years; 3 years to < 7 years; and 7 years or more]). Consequently we included "new" couples who have been together as few as six months in order to identify some of the early

stressors that emerge through the process of relationship formation, some of which may have become too temporally distal for longer-term couples to remember in detail. Our 7-year benchmark distinguishing long-term couples is in keeping with a general finding—from studies of heterosexual marriages—that the risk of relationship dissolution increases in the early years, reaches a peak, and then steadily declines with time (Kulu, 2014). We also sought to recruit participants equally from four regions of the U.S. (Midwest, Northeast, South, and West). Thus we created 24 recruitment cells (3 relationship duration categories X 4 regions X 2 sub-samples based on couple gender).

To further ensure sample diversity, we set quotas to ensure that at least 40% of participating couples were couples where at least one partner is a person of color, and that 20% reported residing in non-Urban areas. Finally, to prevent an over reliance on particular venue types we required that at least two different venue types were referenced by the participants in each recruitment cell illustrated above.

In total, 1,804 individuals completed the brief eligibility survey. From this pool of respondents, 266 same-sex couples were identified as meeting eligibility criteria to participate. Of those, 106 couples (212 individual partners) completed the full survey based on the quota-based sampling strategy described above and constitute the analytic sample for the present analysis. Table 1 contains descriptive statistics for participating couples (N = 106 couples, n = 212 individual partners) for the assessment of CLMS' psychometric properties. This sample, detailed in previous publication (LeBlanc, et al., 2018) was nearly evenly distributed by couple gender, relationship duration, and region of the country. Table 1 includes additional demographic information at both the couple and partner levels.

Foundational Research

Prior to conducting the online, dyadic survey described above, the research team conducted the following preliminary research designed to facilitate item development and cognitive testing.

<u>**Item Development**</u>

The process of moving from couple-level minority stress constructs (Frost, et al., 2017) to a list of potentially useful scale measures that assess unique dimensions of couple-level minority stress began with a large-scale, mixed method study of 120 same-sex couples. This research was based on a novel adaptation of lifeline research methods, wherein participating couples jointly created a relationship timeline, which was used to facilitate in-depth discussions about events or periods of time over the course of their relationship that involved particularly stressful experiences. In previous research, this relationship timeline method is detailed (de Vries, LeBlanc, Frost, Alston-Stepnitz, Stephenson, & Woodyatt, 2017), and that study's primary qualitative findings suggests there are 17 unique couple-level minority stress constructs are introduced: (1) *Fears of rejection, devaluation, and discrimination; (2) *Experiences of rejection, devaluation, and discrimination; (3) *Consequences of unequal legal recognition of same-sex relationships; (4) *Hiding same-sex relationship; (5) Internalizing stigma; (6) *Coming out as a same-sex couple; (7) *Seeking safety and community; (8) Not being perceived as a couple; (9) Having children or not; (10) Navigating benefits for same-sex couples; (11) *Limitations to participation in family; (12) Managing stereotypes about what same-sex couples are like; (13) *Feeling public scrutiny; (14) *Terminology regarding relationships; (15) Exclusion from social support; (16) Lack of role models; and (17) Negotiating gender roles (Frost, et al., 2017). (The meaning of asterisks is explained below).

Based on these new couple-level minority stress constructs, which were built from an extensive team-based coding process (detailed in Frost et al., 2017), the project team met for a two-day, in-person meeting to draft an initial list of survey questions that would elicit data indicative of each stressor. In that meeting team members took turns suggesting wording for items for stress constructs assigned to them, which were then systematically discussed by the larger group. As often as possible the team used participants' own words, available in the transcripts of the relationship timeline interviews. Following that, two co-authors refined those items by systematically: (1) limiting the use of singular pronouns (i.e., I, me) to items that unambiguously pertained to individuals' feelings or perceptions regarding their same-sex relationship; (2) limiting the use of plural pronouns (i.e., we, us) to items that pertained to things that couples "do" or "behaviors" they exhibit together; and (3) eliminating all items where the "cause" and "effect" of stress was contained within the item (i.e., "We receive less support for our relationship *as a result of…*").

The final list of items totaled 132. For the present analysis we limited our focus to 113 items corresponding only to couple-level minority stress constructs that *generally applied to all study participants*, omitting those *relevant to only sub-samples* (e.g., constructs relating to challenges associated with parenting [which apply only to parents], wanting children [which apply only to those desiring to have a child or more children], or in the workplace [which apply only to those employed]).

Cognitive Interviews

Both members of twelve additional couples (*N* = 24) participated in cognitive interviews (Willis, 2005) to evaluate the refined list of items. These couples had previously been recruited for the relationship timeline study referenced above, but were not invited to participate at that

time because sampling quotas had already been filled by the time they screened in. Participants

in the cognitive interviews were selected to represent the diversity of the relationship timeline

sample, which was recruited in two study sites (Greater Atlanta and San Francisco Bay areas).

Within each site, the cognitive interviews were completed by three male couples and three

female couples, and by one couple within each of the three relationship duration categories.

After completing informed consent, and learning the purpose of the cognitive interview,

each partner in these couples individually responded to the survey items with a trained

interviewer present to document all instances where question wording was ambiguous.

Participants read the items aloud, and then reflected on and discussed their interpretations of

their meanings. All problematic items were either deleted or revised to improve question clarity.

In sum, through an extensive coding and survey item development process we narrowed

our focus first to 113 survey items that represented a sub-set of nine the initial 17 constructs (see

those noted with an asterisk above). In other words, in categorizing these new survey items we

came to see that some of our initial constructs could be consolidated because they were

overlapping, or combined because it was not clear whether the survey items reflecting each were

adequate in number to represent a new couple-level minority stress construct (e.g., "Not being

perceived as a couple," [#8 above] and "Terminology about relationships" [#14 above]).

Ultimately, we began with nine potential couple-level minority stress constructs as we developed

survey items for the online, dyadic survey described above, as well as while we subsequently

conducted the data analyses detailed below, with the ultimate goal of identifying useful new

scale measures of couple-level minority stress. The nine constructs and the number of items for

each construct to be evaluated were: (1) Couple-Level Stigma (16 items); (2) Couple-Level

Discrimination (14 items); (3) Seeking Safety as a Couple (11 items); (4) Perceived Unequal

Relationship Recognition (9 items); (5) Couple-Level Visibility (16 items); (6) Managing

Stereotypes about Same-Sex Couples (14); (7) Misperceptions and Problematic Terminology

about Relationships (6 items); (8) Lack of Integration with Families of Origin (16 items); and (9)

Lack of Social Support for Couples (11 items).

Measures to Assess Predictive Validity

Several additional measures, described below, were included in the online, dyadic survey

(N = 106; n = 212) to enable assessment of predictive validity of the new couple-level minority

stress scale. Based on large, existing literatures (e.g., Rostosky & Riggle, 2017) we have

theorized that couple-level minority stress would be significantly associated with both

relationship quality (Frost & LeBlanc, 2019) and mental health (LeBlanc, et al., 2015). In this

analysis, we focus on one indicator of relationship quality (relationship satisfaction) and three

indicators of mental health problems (non-specific psychological distress, depressive

symptomatology, and problematic drinking), offering an assessment of predictive validity.

Therefore we examined its associations between the CLMS and the following:

Relationship Satisfaction. Relationship satisfaction was measured with the four-item

Couples Satisfaction Index (CSI- 4, Funk & Rogge, 2007). In this scale, survey items prompt

responses assessing different aspects of relationship satisfaction, including: (1) their degree of

happiness with their relationship; (2) the degree to which their relationship with their partners are

warm and comfortable; (3) the degree to which their relationship is rewarding; and (4) the degree

to which they are satisfied with their relationship. Response categories varied across the four

questions above. Scale scores can range from 0 to 21, and higher scores indicate higher levels of

relationship satisfaction. Responses to the items in the measure were internally consistent

(Cronbach's Alphas = .82 and .84 for Partners A and B, respectively). The mean of the summed

scores across the 212 individuals was 15.51 (*SD* = 3.28).

Nonspecific Psychological Distress. Nonspecific psychological distress was measured with the six-item K6 scale (Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, et al., 2002), where survey items elicit responses assessing how often respondents felt: (1) nervous; (2) hopeless; (3) restless or fidgety; (4) so depressed that nothing could cheer them up; (5) that everything was an effort; and (6) worthless, in the past 30 days. Response categories were: (1) none of the time; (2) a little of the time; (3) some of the time; (4) most of the time; and (5) all of the time. Responses to items in the measure were internally consistent (Cronbach's Alphas = .93 and .94 for Partners A and B, respectively). This scale was created by summing each participant's responses across the six items. The mean of the summed scores across the 212 individuals was 5.87 (*SD* = 6.16).

Depressive Symptomology. Depressive symptomatology was measured with a 10-item version of the widely used Center for Epidemiologic Studies – Depression (CESD) scale (Anderson, Malmgren, Carter, & Patrick, 1994). This scale includes survey items assessing how often – during the past week – respondents felt they were, for example: bothered by things that usually don't bother them; depressed; hopeful about the future, their sleep was restless; and lonely. Response categories were; (0) rarely or none of the time (less than 1 day); (1) some or a little of the time (1-2 days); (2) occasionally or a moderate amount of time (3-4 days); and (3) most or all of the time (5-7 days). Responses to items in the measure were internally consistent (Cronbach's Alphas were .78 and .73 for Partners A and B, respectively). This scale was created by summing each participant's responses across the ten items. The mean of the summed scores across the 212 individuals was 7.42 (*SD* = 4.83).

Problematic Drinking. Problematic drinking was assessed with 9 items from the Alcohol

Use Disorders Identification Test (AUDIT), a well-known scale measure that typically includes 10 scale items. One item ("needing a drink in the morning to get going after a heavy drinking session") was unintentionally omitted from our survey, requiring us to rely on 9 items only. Consequently, the version we used in these analyses slightly underestimates the amount of problematic drinking in this sample (Saunders, Aasland, Barbor, de la Fuente, & Grant, 1993). The AUDIT assesses both the frequency of drinking and related behaviors during the last year (e.g., failing to do what was normally expected because of drinking, having a feeling of guilt or remorse after drinking, and being unable to remember what happened the night before because of drinking). Higher scores are indicative of more problematic drinking (i.e., greater frequency and related behaviors). Responses to items in the measure were internally consistent (Cronbach's Alphas were .88 and .92 for Partners A and B, respectively). This scale was created by summing each participant's responses across nine items. The mean of the summed scores across the 212 individuals was 6.73 ($SD = 6.33$).

Moreover, we anticipated that couple-level minority stress would account for a significant amount of variance above and beyond the variance accounted for by established measures of individual-level minority stress. Therefore we included the following, well-established indicators of minority stress at the individual level to be able to estimate the amount of variance independently accounted for by couple-level minority stress after taking these measures of individual minority stress into account.

Sexual Minority Stigma (Individual Level). Sexual minority stigma was measured with a 6-item scale developed by Meyer and colleagues (2008). The scale, adapted from Link's (1987) work on stigma associated with mental illness, is applicable to multiple social categories at once. Respondents are presented with the following instructions: "These next statements refer to a

person like you; by this we mean persons who have the same gender, race, sexual orientation, nationality, ethnicity, and/or socioeconomic status as you. In answering, we would like you to respond on the basis of how you feel people in general regard you in terms of such groups." Participants were then asked to indicate how much they agreed with statements such as: most employers would not hire a person like (them), most people think that a person like (them) is dangerous and unpredictable, and most people look down on people like (them). Response categories were; (1) disagree strongly; (2) disagree somewhat; (3) agree somewhat; and (4) agree strongly. Responses to items in the measure were internally consistent (Cronbach's Alphas were .88 and .85 for Partners A and B, respectively). This scale was created by summing each participant's responses across the six items. The mean of the summed scores across the 212 individuals was 11.35 (*SD* = 4.05).

Internalized Homophobia (Individual Level). Internalized homophobia was measured with a 5-item scale (Herek, Gillis, & Cogan, 2009) where survey items assess how often in the past year respondents, for example: have tried to stop being attracted to (the) same sex, have wished they weren't (gay, lesbian, or bisexual), or would have liked to get professional help in order to change (their) sexual orientation from (gay, lesbian, or bisexual) to straight. Response categories were; (0) never; (1) rarely; (2) sometimes; and (3) often. Responses to items in the measure were internally consistent (Cronbach's Alphas were .87 and .86 for Partners A and B, respectively). This scale was created by summing each participant's responses across the five items. The mean of the summed scores across the 212 individuals was 3.71 (*SD* = 3.51).

Everyday Discrimination (Individual Level). Everyday discrimination was measured with a 10-item scale (Williams, Gonzales, Williams, Mohammed, Moomal, & Stein, 2008) where survey items assess how often respondents encounter different kinds of discriminatory

experiences, including how often they: were treated with <u>less courtesy</u> than other people are, receive poorer service than other people at restaurants or stores, people act as if they are afraid of (them), are called names or insulted, and are threatened or harassed. Response categories were; (0) never; (2) rarely; (3) sometimes; and (4) often. Responses to items in the measure were internally consistent (Cronbach's Alphas were .91 and .91 for Partners A and B, respectively). This scale was created by summing each participant's responses across the 10 items. The mean of the summed scores across the 212 individuals was 10.29 ($SD = 6.31$).

Sexual Minority Concealment (Individual Level). Sexual minority concealment was measured with a 6-item scale (Meyer et al., 2002) where survey items assess how "out of the closet" respondents are to the people in their lives, including: family; gay, lesbian, or bisexual friends; straight friends; co-workers; health care providers and neighbors. Response categories were; (1) out to all; (2) out to most; (3) out to some; and (4) out to none. Responses to items in the measure were internally consistent (Cronbach's Alphas were .88 and .87 for Partners A and B, respectively). This scale was created by summing each participant's responses across the six items. The mean of the summed scores across the 212 individuals was 11.75 ($SD = 4.23$).

Data Analysis

One-way frequencies generated in SPSS version 24 for Windows characterized the sample (IBM, 2017). Next, factor analyses were performed to ascertain the latent structure of the new measure. Due to the availability of a substantial number of items (113) relative to the moderate number of research participants (212) and our goal to emerge with the new measure to be comprehensive yet as brief as possible so that it can be applied in time-limited settings, a two-step factor analysis procedure was used. In the *item screening step*, the specialized exploratory factor analysis (EFA) program FACTOR 10.5.01 (P. J. Ferrando & U. Lorenzo-Seva, 2017) was

used to extract the optimal number of factors via maximum likelihood estimation for each

subscale and to identify the subset of items which unambiguously measure their parent factors

while also not measuring other factors in the same subscale (i.e., unidimensionality). Prior to

performing EFAs, the suitability of the correlations among the items for each subscale for factor

analysis were assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy

(MSA). To be appropriate for a factor analysis, the partial correlations among the variables

controlling for all other variables should be small relative to the original bivariate correlations.

The MSA summarizes how much smaller the partial correlations are relative to the original

correlations via the ratio of the sum of squared original correlations to the sum of the squared

original correlations plus the sum of squared partial correlations. Therefore, values closer to 1.00

indicate smaller partial correlations and thus better adequacy of the correlations for EFA. MSA

values below .60 indicate that the input correlation matrix is not suitable for factor analysis

(Tabachnik & Fidell, 2001).

Following confirmation of adequacy of the input correlations, EFA was used to select the

number of latent factors to extract and evaluate the unidimensionality of items for each subscale.

FACTOR was chosen for these EFAs because it features the Hull method for determining the

optimal number of common factors and several unidimensionality assessment measures not

found in other EFA programs. The Hull method is a quantitative analog to Cattell's subjective

scree plot and has been shown to outperform other popular methods for determining the number

of common factors, including parallel analysis and the minimum average partial test (MAP),

across a wide variety of analytic conditions (Lorenzo-Seva, Timmerman, & Kiers, 2011).

Following determination of the number of common factors per subscale, for each factor

we used two indices of closeness to unidimensionality, item explained common variance (I-

ECV) and item residual absolute loadings (I-REAL), to identify items that departed from

unidimensionality. ECV is the ratio of the sum of squared factor loadings of the first factor to the

sum of the squared factor loadings for all factors and quantifies the dominance of the first factor

relative to the remaining factors; I-ECV is an item-level version of this statistic suitable for

assessing each item's departure from unidimensionality. Because it is possible for items with

large I-ECV values to have residual multidimensionality, we also computed the I-REAL statistic

for each item. I-REAL quantifies the factor loading for the item on the second factor in a two-

factor orthogonal solution where the first factor is the substantive factor of interest and the

second factor is a residual factor. The absolute loadings of the second factor represent the degree

of departure from unidimensionality. Thus, large I-ECV values and small I-REAL values support

unidimensionality. Here we employed cutoffs of I-ECV $\geq$ .85 and I-REAL $\leq$ .30 recommended

in the literature to retain items for subsequent analyses (Pere J. Ferrando & Urbano Lorenzo-

Seva, 2017). The goal of this step was for the analysis to emerge with a reduced set of items

which unidimensionally measured their parent factors for each of the nine subscales.

By proceeding subscale-by-subscale in the item screening step to identify and remove

poorly-performing items, it was not possible to test whether items cross-loaded on other factors

across multiple subscales. In addition, FACTOR does not calculate factor loading confidence

intervals and global model fit statistics for clustered data structures. To address these limitations,

we followed the approach recommended by Gerbing and Hamilton (Gerbing & Hamilton, 1996)

to perform confirmatory factor analysis (CFA) as a follow-up to the initial EFAs to further

evaluate the factor structure obtained from the initial EFA. In addition, CFA permits testing and

comparison of factor structures other than the default structure featuring correlated lower-order

factors. One example is a higher-order factor structure in which the correlations among the

lower-order factors are explained by a higher-order general factor, a structure that will be fitted

and compared with the typical correlated lower-order factors structure in this article to evaluate

whether a single general couple-level minority stress latent factor can explain the correlations

among the hypothesized lower-order specific CLMS factors.

Thus, the items and factors originating from the item screening step were submitted to

CFA in a second *cross-loadings assessment* step using M*plus* 8 (Muthén & Muthén, 1998-2017).

This approach enabled us to explore whether items would associate with other factors in addition

to their originally hypothesized factor because poor fit from the CFA would suggest that non-

trivial cross-loadings might be present. Examination of the data indicated non-significant levels

of skewness without strong floor or ceiling effects, so maximum likelihood estimation with

robust standard errors and test statistics (M*plus* MLR estimator) was used as recommended in the

statistics literature for 5-point Likert scales (Rhemtulla, Brosseau-Liard, & Savalei, 2012).

Global model fit for CFAs was assessed using the chi-square test of exact fit. Because the chi-

square test is sensitive to trivial departures of model-data fit at moderate to large N and for

models with many factors and items, the following well-studied approximate fit statistics were

used to assess approximate model-data fit: the comparative fix index (CFI), the root mean square

error of approximation (RMSEA), and the standardized root mean square residual (SRMR).

Satisfactory model-data fit was determined by two of the following three criteria being met as

recommended by Hu and Bentler (Hu & Bentler, 1999): CFI $\geq$ .95, RMSEA $\leq$ .06, and SRMR $\leq$

.08. CFAs featuring a) correlated lower-order factors and b) a higher-order factor structure to

explain the correlations among the lower-order factors were evaluated and compared via a nested

likelihood-ratio test for robust chi-square differences (Satorra & Bentler, 2010). For the final

CFA we report the standardized factor loadings and their 95% confidence intervals.

Internal reliability for each subscale was then computed using Raykov's ρ coefficient, which is conceptually similar to Cronbach's coefficient α, but relaxes α's often unrealistic assumption of equal factor loadings (Raykov, 1997). An additional benefit of Raykov's reliability approach is the option to conveniently compute 95% confidence intervals for ρ; in this study we generated 95% CIs for ρ using the logit transformation approach (Raykov & Marcoulides, 2011). Following establishment of satisfactory factor structure and internal reliability for each subscale, we correlated the CLMS subscales with the four measures of individual-level sexual minority stress to evaluate construct validity via assessing the convergent and divergent validity of the couple-level CLMS subscales with the individual-level minority stress measures. We also computed semipartial (i.e., part) correlations of each CLMS subscale with the measures of psychological health and distress, and problematic drinking, while controlling for the measures of individual-level minority stress described above to assess predictive validity. We hypothesized that CLMS subscales would be negatively associated with relationship satisfaction and positively associated psychological distress, depressive symptomatology, and problem drinking with the pattern of the associations varying by CLMS subscale, signifying discriminant validity.

Although couple-level minority stress occurs as a result of individuals being in a same-sex relationship, the experience of stress and potentially related mental health outcomes are individual-level phenomena and measured at the individual level. Accordingly, we treated individual as the unit of analysis in the factor analysis, reliability, and correlational analyses in this study. Because individuals are nested within couples, cluster-adjusted standard errors, confidence intervals, and test statistics are used to obtain correct inferences in the CFA, reliability, and correlational analyses.

Results

Item Screening

KMO MSA statistics ranged from .72 to .93 and indicated correlations suitable for performing factor analyses on eight of the nine subscales. The exception was the Misperceptions and Problematic Terminology about Relationships subscale. The KMO test value was .58, which is poor and indicates the correlation matrix is not suitable for performing EFA. We therefore concluded these items did not form a subscale and that all six items should be dropped. For the remaining eight subscales, the Hull method identified one common factor underlying each subscale. Across these eight EFA analyses, 55 of the original 113 items met the targets for I-ECV and I-REAL for unidimensionality and were retained. These 55 retained items appear in Table 2.

Cross Loadings Assessment

As shown in Table 2, 55 items measuring eight latent factors were retained for the cross loadings assessment step. Confirmatory factor analysis (CFA) incorporating eight lower-order correlated factors rejected the null hypothesis of exact model-data fit (χ^2(1402) = 2378.70, p < .0001). However, the model achieved satisfactory approximate fit (RMSEA=.057, SRMR=.074, CFI=.853), which supports the original expectation that each subscale's items would not appreciably load onto other subscales' factors. A higher-order factor model postulating a general couple minority stress factor was also tested. The null hypothesis of exact model-data fit was rejected (χ^2(1402) = 2378.70, p < .0001) and the model failed to meet two of three approximate fit cutoffs (RMSEA=.061, SRMR=.093, CFI=.831). A nested model comparison also rejected the null hypothesis that the higher-order factor model fit as well as the correlated lower-order factors model (χ^2(20) =155.27, p < .001). Therefore, the CFA with eight correlated factors was chosen

as the final model. Standardized factor loadings and their 95% confidence intervals for this

model appear in Table 2 while interfactor correlations are shown in Table 3. Couple-Level

Stigma, Couple-Level Discrimination, Perceived Unequal Relationship Recognition, and

Managing Stereotypes about Same-Sex Couples were the most highly correlated subscales

whereas Seeking Safety for Couples and Lack of Integration with Families of Origin were the

least correlated subscales.

Internal Reliability

Internal reliability estimates for the eight subscales were all strong ranging from .75 for

Lack of Social Support for Couples to .94 for Couple-Level Discrimination. Confidence intervals

were all greater than the commonly-accepted threshold of .70, even for subscales with relatively

few items such as Perceived Unequal Relationship Recognition, suggesting that the abbreviated

subscales presented in Table 2 are sufficient to attain satisfactory internal consistency reliability.

Convergent/Divergent Validity

The CLMS subscales measuring Couple-Level Stigma, Couple-Level Discrimination,

Unequal Relationship Recognition, Couple-Level Visibility, and Managing Stereotypes about

Same-Sex Couples were moderately positively correlated with the four measures of individual-

level minority stress with the associations being strongest for everyday discrimination

experiences and sexual minority concealment (see Table 4). While these correlations suggest

convergent validity, the largest (r=.68) when squared yields less than half of the variance being

shared between the CLMS subscales and the individual-level minority stress measures. Further

evidence of divergent validity appears in the modest positive correlations between the CLMS

subscales: Seeking Safety for Couples, Lack of Integration with Families of Origin, and Lack of

Social Support for Couples. Taken as a whole, these results suggest that the CLMS subscales

measure perceived minority stress experiences distinct from individual-level minority stress experiences.

Predictive Validity

Correlations of the eight couple minority stress subscales with measures of relationship quality, and mental health also appear in in Table 4. As shown in Table 4, relationship satisfaction is moderately negatively correlated with all but one of the CLMS subscales (Seeking Safety for Couples). As also shown, psychological distress, depressive symptomatology, and problematic drinking scores are each modestly to moderately positively associated with all of the CLMS subscales, except for Lack of Integration with Families of Origin, which was not significantly associated with psychological distress and depressive symptomatology scores, though it was positively associated with problematic drinking scores.

Semipartial (part) correlations reprised these associations while controlling for the individual-level minority stress measures of sexual minority stigma, internalized homophobia, everyday discrimination, and sexual minority concealment (described above). Semipartial correlations indicated significant independent contributions to the variance of relationship satisfaction, K6 psychological distress, and problematic drinking above and beyond that of individual-level minority stressors for most of the CLMS subscales.

Taken collectively, the results presented in Table 4 illustrate predictive validity in that the couple-level minority stress subscales are positively associated with indicators of relationship quality and mental health problems, even after accounting for the variance attributable to individual-level experiences of minority stress. Furthermore, the pattern of significant semipartial correlations and their magnitudes differ depending on which mental health measure is examined, suggesting different CLMS subscales are predictive of different mental health

outcomes (discriminant validity). Although relatively weak (r=-.16), and in the absence of a zero-order correlation, the negative semipartial correlation between the Lack of Integration with Families of Origin CLMS subscale and depressive symptoms is an unexpected finding that merits further consideration in the ongoing study of couple-level minority stress.

In summary, evidence for predictive validity emerges for CLMS subscales even in the presence of individual-level minority stressors. Thus, researchers should be able to consider both types of constructs in the same analysis simultaneously. This enables the estimation of couple-level stress effects while controlling for individual-level stress effects, opening up exciting new possibilities of isolating the unique effects of couple-level minority stress.

Appendix A contains the final couple-level minority stress measure, along with scoring instructions.

Discussion

Minority stress frameworks for the study of how stigmatized individuals suffer unique stressors (i.e., minority stressors) have proven to be very useful in the study of sexual minority mental health. However, despite the reality that stress experiences are typically shared with close others has long been apparent, that reality has not been fully examined in empirical research. Building on existing research focused on relationship marginalization (Lehmiller & Agnew, 2006; 2007) and relationship stigma (Gamarel, et al., 2014; Rosenthal & Starks, 2015), we argue that distinguishing between individual- and couple-level domains of minority stress allows for deeper understandings of stress experience, and have focused on minority stress experience among partners in same-sex relationships as a case in point (LeBlanc, et al., 2015; Frost, et al., 2017) Extending the focus from the individual- to the couple-level offers one important step toward more fully recognizing the shared nature of stigma and the resulting stressors. This

extension of minority stress frameworks will deepen theoretical understandings of how minority stress may uniquely affect relationship quality and individual partner well-being within sexual minority populations. It will also inform future attempts to conceive of and measure novel minority stress experiences that have yet to be identified. Each successful attempt to broaden the stress universe – minority and otherwise – not only sharpens theory, but additionally points to previously unexamined points of intervention to diminish the harmful effects of stress on relationships and the individuals who create them. Collectively, such efforts hold potential for better addressing documented health disparities faced by sexual minority populations.

The goal of this study is to present a measure of couple-level minority stress, which can be used alongside the well-known individual-level minority stress measures commonly used in the field. Our psychometric analysis of data from an online dyadic survey of 106 same-sex couples extracted eight factors, which can enhance the field of minority stress research: (1) Couple-Level Stigma; (2) Couple-Level Discrimination; (3) Seeking Safety as a Couple; (4) Perceived Unequal Relationship Recognition; (5) Couple-Level Visibility; (6) Managing Stereotypes about Same-Sex Couples; (7) Lack of Integration with Families of Origin; and (8) Lack of Social Support for Couples. The psychometric properties of the eight subscales which measure these factors suggest that they have clear factor structure, are reliable, and are associated with measures of mental health and individual-level measures of sexual minority stress, while capturing unique variance not accounted for by existing individual-level sexual minority stress measures, which demonstrates predictive validity. Thus, they hold great potential for addressing the unique stress that sexual minority individuals experience through society's stigmatization of their intimate relationships.

Researchers will be able to include them in predictive models that simultaneously assess

other stress domains (e.g., general life stressors, individual-level minority stressors) as determinants of mental health and additional measures of relationship quality (e.g., relationship dissolution) and well-being (e.g., physical health). Such models will also lead to the identification of previously unexamined mechanisms of stress proliferation (Pearlin, 1999; Pearlin & Bierman 2013) involving couple-level minority stress experience, enriching social stress theory more broadly. Studies using dyadic data will further contribute through the identification of both actor and partner effects (Kenny & Ledermann, 2010) in the study of stress and well-being in relational contexts.

Additionally, the multidimensional nature of the CLMS facilitates its use in addressing the effects of stressful experiences in varying domains or contexts of life experience. For example, during the current historical moment where same-sex marriage is an issue of great social, legal, and political importance, research has investigated the salience of one particular couple-level minority stressor – perceived unequal relationship recognition – to the mental health of persons in same-sex relationships. This particular stressor was found to be significantly associated with mental health even after controlling for legal marital status, and relevant sociodemographic controls (LeBlanc, et al., 2018). Similarly, future research can selectively focus on unique dimensions of the CLMS as is appropriate.

Our findings and resulting scale should be interpreted in the context of several study limitations. First, although we strove to obtain an especially diverse sample of same-sex couples, our sample was not a formal probability sample, so these results cannot be used to generalize to the larger population of same-sex couples. Representative samples of same-sex couples do not currently exist. Second, given the challenges of recruiting intact same-sex couples, it was not possible to recruit a sufficiently large number (i.e., thousands) of couples necessary to

simultaneously examine all 113 of the initial items simultaneously, especially among subgroups such as male vs. female couples, couples of differing relationship duration, and couples of varying racial/ethnic composition. The cross-sectional nature of the data also precluded examining predictive validity prospectively. Finally, with a single sample we could only employ CFA as a follow-up to EFA in the service of further exploring the initial factor structure of the CLMS; without a second sample it was not possible to perform a subsequent confirmatory factor analysis on a new, independent sample to cross-validate the final factor structure from the initial factor analyses performed on this sample, all of which must be considered exploratory in the broad sense of the term. Indeed, further research is needed to examine the stability of our proposed eight factors and their constituent items in new samples, especially across subgroups and with prospective predictive validity.

The negative association between Lack of Integration with Families of Origin with depressive symptoms, which is contrary to expectations, merits further study as a reminder that some couple-level minority stress measures may assess experiences that are not uniformly stressful for same-sex couples. Consider, for example, that exclusion from holidays with families of origin may not have a negative impact on the health of couples who have strained relationships with their families of origin or who do not desire greater integration in their lives. Future research should consider for whom and under what conditions this form of couple-level minority stress may negatively impact well-being. To illustrate, the lack of integration into one's – or one's partner's – family of origin might be stressful primarily in cases where the present level of familial integration does not match either partner's desired level (with their own family, their partner's family, or both). Indeed, how varying aspects of the relationships between partners in same-sex relationships and their respective families of origin is more uniformly a

source of minority stress requires greater investigation.

Despite these limitations, the present study also has a number of key strengths. It includes initial survey items that were developed from a theoretically based and methodologically rigorous process that included a large-scale relationship timeline study and cognitive interviews conducted with a diverse sample (in terms of gender, relationship duration, race/ethnicity, geographic region of the country, and urbanicity) of intact same-sex couples. This research may also contribute to future conversations regarding the varying relational contexts of stress experiences, beyond those unique to sexual minority persons, including, for example, people in inter-racial/ethnic and intergenerational relationships (LeBlanc et al., 2015). Moreover, we anticipate that in the theory-based research projects focused on a broader range of mental health outcomes, and including physical health outcomes, will help to deepen current understandings of the relationship between minority stress experiences and well-being at the individual and couple levels among stigmatized individuals, and those in stigmatized relationship forms. Finally, we anticipate that our focus on couple-level minority stress among people in same-sex relationships might inspire the identification of previously unexamined domains of stress experiences in relational context, beyond the romantic, intimate partnership to other relational contexts, such as parent and child or sibling and sibling.

Compliance with Ethical Standards

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Table 1

Table 1. Descriptive Statistics, Couple- and Partner-Level Statistics

COUPLE-LEVEL VARIABLES (N = 106)	Frequency (Percent)
Gender (1 = Women)	48 (45.3%)
Race/Ethnicity (1 = One or Both Partners is/are Person of Color)	51 (48.1%)
Missing information	1 (0.9%)
Relationship Duration	
At least 6 months < 3 years	41 (38.7%)
3 years < 7 years	36 (34.0%)
7 years or more	29 (27.4%)
Geographic Region of U.S.	
Northeast	25 (23.6%)
South	22 (20.8%)
Midwest	31 (29.2%)
West	28 (26.4%)
Rural vs. Urban (1 = Lives in a Rural Area)	29 (27.4%)
Relationship Status	
Legally Married (but not in a Registered Domestic Partnership or Civil Union)	10 (9.4%)
Registered Domestic Partnership (but not in a Legal Marriage)	19 (17.9%)
Both Married and Domestic Partnership	11 (10.4%)
Relationship Not Legally Recognized	61 (57.5%)
Decline to answer	5 (4.7%)
Cohabit? (1 = Yes)	104 (98.1%)
Co-Parent Children (1 = Yes)	19 (17.9%)
Household Income[a]	
$0 to $19,999	3 (2.8%)
$20,000 to $24,999	2 (1.9%)
$25,000 to $34,999	2 (1.9%)
$35,000 to $44,999	1 (0.9%)
$45,000 to $54,999	3 (2.8%)
$55,000 to $64,999	3 (2.8%)
$65,000 to $74,999	20 (18.9%)
$75,000 to $99,999	30 (28.3%)
$100,000 to $149,000	30 (28.3%)
$150,000 to $199,000	0 (0.0%)
$200,000 to $299,999	1 (0.9%)
Decline to answer	11 (10.4%)
PARTNER-LEVEL VARIABLES (N = 212)	**Frequency (Percent)**
Age[b]	34.80 (8.6)
Ethnicity (1 = Spanish, Hispanic, Latino)	30 (14.2%)
Race[c]	
American Indian/Alaskan Native	7 (3.3%)
Asian	6 (2.8%)
Black/African American	39 (18.4%)
Native Hawaiian/Pacific Islander	5 (2.4%)
White	153 (72.2%)
Other	4 (1.9%)
Decline to answer	1 (0.5%)
Education	

Less than Bachelor's Degree	89 (42%)
Bachelor's Degree or Greater	121 (57.1%)
Decline to answer	2 (.9%)
Employment	
Full-Time	165 (77.8%)
Part-Time	17 (8.0%)
Self-Employed	10 (4.7%)
Unemployed	8 (3.8%)
Disabled	4 (1.9%)
Retired	1 (0.5%)
Other	7 (3.3%)
[a]In instances where two partners selected different household income categories, the couple was assigned a mid-point category if possible. If partners selected adjacent categories, the couple was assigned the higher of the two categories selected. [b]Mean (Standard Deviation) [c]Participants may have self-identified with more than one race and therefore responses add up to more than 100%.	

Table 2

Table 2. Standardized Factor Loadings and Reliability Estimates for Couple-Level Minority Stressor Scales ($N = 212$ Individual Partners from 106 Couples)

COUPLE-LEVEL MINORITY STRESSORS	RELIABILITY ESTIMATES AND FACTOR LOADINGS[a] (95% Confidence Intervals)
COUPLE-LEVEL STIGMA[b]	.89 (.86, .91)
1. If something happens to one of us the hospital won't recognize me or my partner	.50 (.37, .63)
2. Strangers will hassle us when we're eating in restaurants	.81 (.75, .86)
3. Showing affection for my [partner] when we are in new environments/unfamiliar places	.50 (.39, .61)
4. Strangers will harm us if we display affection in public	.66 (.57, .74)
5. Social situations that may require me to explain more about my relationship than I want	.62 (.53, .71)
6. Our neighbors will discriminate against us	.80 (.73, .87)
7. That if something happens to my [partner], his/her family won't allow me to be included in the management of his/her affairs	.65 (.55, .75)
8. If something happens to me, my family won't allow my [partner] to be included in the management of my affairs	.72 (.62, .82)
9. Retirement communities and nursing homes won't be accepting of us	.63 (.52, .74)
10. My relationship with my [partner] would negatively affect my chances of getting or keeping a job	.65 (.51, .79)
COUPLE-LEVEL DISCRIMINATION[c]	.94 (.93, .95)
1. People we know asked that we not show affection toward one another in their presence	.72 (.64, .80)
2. People we know asked us to hide physical displays of affection (e.g., hugging or kissing) towards one another around children	.80 (.74, .85)
3. We received poor service in restaurants or stores	.76 (.69, .82)
4. People we know sat or stood away from us when we were together in public	.79 (.74, .85)
5. We were harassed when we were out in public together	.78 (.73, .86)
6. We have been denied the right to be together in health care settings (e.g., to visit one another in the hospital)	.79 (.73, .86)
7. People we know went out of their way to avoid talking about our relationship	.76 (.70, .82)
8. People we know said that they wished my [partner] was the "opposite sex"	.81 (.76, .86)
9. We were made fun of when we were out in public together	.79 (.73, .85)
10. At times when we talked about our life as a couple, people we know cut us off or tried to change the subject	.80 (.75, .86)
SEEKING SAFETY AS A COUPLE[d]	.83 (.79, .87)
1. When planning travel, we consider whether potential destinations are accepting of us as a couple	.79 (.73, .86)
2. We would like to move to a new city or neighborhood that is more accepting us as a couple	.60 (.47, .72)

3.	We have to be cautious when traveling to less tolerant areas	.65 (.54, .72)
4.	There are places we would never consider living as a couple	.51 (.37, .65)
5.	We try to work with professionals (e.g., attorneys and health service providers) that we know are accepting of other couples like us	.65 (.53, .77)
6.	When choosing where to live, it is important to find a neighborhood where there are couples like us	.69 (.61, .77)
7.	We choose to shop at stores where we feel welcomed as a couple	.63 (.50, .75)
PERCEIVED UNEQUAL RELATIONSHIP RECOGNITION[d]		.79 (.73, .84)
1.	Important milestones (e.g., buying a house or writing a will) are complicated for us	.79 (.71, .86)
2.	It is difficult for us to keep up with the changing legal status of same-sex relationships	.77 (.69, .85)
3.	It is harder for us to file our tax returns than it is for other couples	.67 (.56, .78)
COUPLE-LEVEL VISIBILITY[c]		.89 (.87, .91)
1.	We tried to hide our relationship to avoid making others feel uncomfortable	.78 (.71, . 85)
2.	We went "back in the closet" when traveling to conservative or unfamiliar places	.70 (.63, .78)
3.	We avoided displaying LGBTQ identified symbols (e.g., Rainbow Flag, Pink Triangle) at our home or on our car(s)	.58 (.42, .74)
4.	We avoided social interactions that might require us to answer questions about our relationship	.77 (.70, .84)
5.	We avoided talking about our relationship	.80 (.74, .86)
6.	We misrepresented one another as friends, roommates, siblings, cousins, etc.	.80 (.72, .88)
7.	We found it challenging to tell people about our relationship	.66 (.57, .76)
8.	We had to come out as a couple to get the things we want in life	.49 (.34, .64)
9.	I wrestle with whether it's easier to go to important events alone or with my [partner][d]	.70 (.61, .78)
MANAGING STEREOTYPES ABOUT SAME-SEX COUPLES[d]		.81 (.77, .85)
1.	There are no good role models for how to be in a same-sex relationship	.59 (.49, .69)
2.	We have to make our own rules about what it is like to be in a same-sex couple	.41 (.28, .54)
3.	People assume one of us is more like "the man" in the relationship and the other is more like "the woman" in the relationship	.56 (.42, .70)
4.	People think our relationship is mainly about sex	.76 (.68, .84)
5.	People assume we do not want to be parents	.74 (.66, .82)
6.	People assume we have an open or non-monogamous relationship	.77 (.70, .84)
LACK OF INTEGRATION WITH FAMILIES OF ORIGIN[d]		.91 (.88, .93)
1.	We prefer to attend family holidays and events together (R)	.79 (.73, .86)
2.	My family acknowledges that my [partner] and I are in a relationship with each other (R)	.79 (.73, .86)
3.	My [partner's] family acknowledges that we are in a	.71 (.59, .83)

relationship with each other (R)	
4. My family invites my [partner] to family holidays or events (R)	.83 (.77, .89)
5. My [partner's] family invites me to family holidays or events (R)	.80 (.70, .90)
6. We include our families in our celebrations and events (R)	.84 (.79, .90)
LACK OF SOCIAL SUPPORT FOR COUPLES[d, e]	.75 (.70, .81)
1. There is no one that my [partner] and I can call when we are having a rough time in our relationship	.64 (.52, .76)
2. There are people we know who are rooting for us to make it as a couple (R)	.67 (.57, .77)
3. People we know support our efforts to achieve our goals as a couple (R)	.73 (.63, .83)
4. People we know take concerns about our safety seriously (R)	.63 (.53, .73)

Notes: Standardized factor loadings and 95% confidence intervals were generated from a confirmatory factor analysis (CFA) estimated in M*plus* version 8 using maximum likelihood estimation with robust standard errors and test statistics (M*plus* estimator MLR). Confidence intervals are adjusted for clustering of individuals within couples (M*plus* analysis TYPE = COMPLEX). Reliability coefficients were similarly computed in M*plus* for each subscale under the same MLR and COMPLEX estimation settings used in the CFA. Reliability confidence intervals are based on logit transformation of the cluster-adjusted standard errors from M*plus*. [a] Reliability estimates for each subscale; standardized factor loadings for each item. [b] Response categories: 0 = not at all; 1 = a little; 2 = a moderate amount; 3 = a lot; 4 = a great deal; [c] Response categories: 0 = never; 1 = rarely; 2 = sometimes; 3 = often; 4 = always; [d] Response categories: 0 = not at all true; 1 = somewhat true; 2 = moderately true; 3 = mostly true; 4 = completely true; [e] (R) items are reverse-coded when creating subscales.

Table 3. Correlations of Couple Minority Stress Subscales ($N = 212$ Individual Partners from 106 Couples)

	I	II	III	IV	V	VI	VII	VIII
I. Couple-Level Stigma	—	.87***	.51***	.86***	.90***	.81***	.23**	.56***
II. Couple-Level Discrimination	.78***	—	.35***	.74***	.88***	.76***	.46***	.68***
III. Seeking Safety as a Couple	.46***	.32***	—	.57***	.41***	.48***	-.28**	-.02
IV. Perceived Unequal Relationship Recognition	.70***	.64***	.48***	—	.83***	.70***	.30***	.55***
V. Couple-Level Visibility	.80***	.82***	.39***	.69***	—	.81***	.36***	.66***
VI. Managing Stereotypes about Same-Sex Couples	.66***	.67***	.43***	.55***	.69**	—	-.08	.41***
VII. Lack of Integration with Families of Origin	.21**	.40***	-.22**	.26***	.31***	.05	—	.62***
VIII. Lack of Social Support for Couples	.44***	.58***	.004	.41***	.55***	.31***	.54***	—

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$. Interfactor correlations among latent factors appear in the upper diagonal; correlations among observed mean scores appear in the lower diagonal. All correlations were estimated via full-information maximum likelihood estimation (FIML) in M*plus* 8. P-values were computed assuming 212 individuals were clustered within 106 couples.

Table 4. Correlations of Couple Minority Stress Subscales with Mental Health Measures Controlling for Individual-Level Minority Stress Measures (*N* = 212 Individual Partners from 106 Couples)

	Zero-Order Correlations								Semipartial Correlations			
	Stigma	IH	ED	SMC	CSI	K6	CESD	AUDIT	CSI	K6	CESD	AUDIT
I. Couple-Level Stigma	.53***	.55***	.62***	.48***	-.43***	.38***	.38***	.55**	-.25**	.15*	.23**	.26***
II. Couple-Level Discrimination	.54***	.59***	.68***	.68***	-.50***	.37***	.28**	.54***	-.31**	.11	.07	.25***
III. Seeking Safety as a Couple	.22**	.17*	.23**	.16*	.04	.16*	.29***	.19*	.14	.06	.21**	.05
IV. Perceived Unequal Relationship Recognition	.38***	.44***	.39***	.38***	-.39***	.30***	.34***	.40***	-.21*	.12*	.23**	.17**
V. Couple-Level Visibility	.52***	.50***	.55***	.60***	-.47***	.36***	.39***	.51***	-.25**	.15*	.26**	.27***
VI. Managing Stereotypes about Same-Sex Couples	.54***	.44***	.53***	.48***	-.32***	.41***	.42***	.44***	-.09	.22***	.28**	.15*
VII. Lack of Integration with Families of Origin	.14	.19*	.17	.25**	-.43***	.12	-.09	.20**	-.34***	.05	-.16*	.12*
VIII. Lack of Social Support for Couples	.31***	.33***	.33***	.41***	-.58***	.24***	.20**	.37***	-.45***	.11	.09	.22***

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$. Zero-order correlations were estimated via full-information maximum likelihood estimation (FIML) in M*plus* 8. P-values were computed assuming 212 individuals were clustered within 106 couples. Semipartial correlations controlled for the following individual-level minority stress measures: sexual minority stigma, internalized homophobia, everyday discrimination, and sexual minority concealment. CSI: Couple Satisfaction Index (relationship satisfaction); K6: non-specific psychological distress; CESD: Center for Epidemiological Studies depressive symptomatology scale); AUDIT: Alcohol Use Disorders Identification Test; Stigma: sexual minority stigma (individual level); IH: internalized homophobia (individual level); ED: everyday discrimination (individual level); SMC: sexual minority concealment.

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