Risk and resilience in couple’s adjustment to the COVID-19 pandemic

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Abstract
The COVID-19 pandemic’s global scope and resulting social distancing measures have caused unprecedented economic, lifestyle, and social impacts to personal and relationship well-being. While lockdowns have prompted individuals to increase reliance on intimate partners for support, stressful external contexts can also interfere with partners’ capacity to request and provide support, resulting in relationship dissatisfaction and even dissolution. Guided by a risk and resilience framework, this study examined the impact of perceived stress, social contextual factors, and dyadic coping on self-reported relationship satisfaction changes during the initial United States COVID-19 lockdown period. Participants were adults in romantic relationships who completed an online survey between April 13 and June 8, 2020. Overall, survey respondents (N = 1106) reported higher perceived stress levels than established population norms, and small but significant decrements in relationship satisfaction. Multivariable models revealed that higher perceived stress levels were associated with lower relationship satisfaction levels. Additionally, dyadic coping was found to moderate the impact of perceived stress on relationship satisfaction (B = .05, 95% CI = .02–.07), suggesting that engaging in dyadic coping buffered individuals from adverse effects of perceived stress on their relationships. Findings emphasize heightened stress experienced by individuals during the pandemic,
potential detrimental effects of stress on couple relationships, and suggest dyadic coping may help buffer couples from adverse effects of the pandemic on their relationships. As such, dyadic coping may be an important target for future interventions designed to assist couples during the ongoing pandemic and future pandemics/natural disasters.

Keywords
COVID-19, couple relationships, relationship satisfaction, resilience, dyadic coping

The global scope of the Coronavirus 2019 (COVID-19) pandemic and its impacts on modern society are unprecedented. In the early effort to control the spread of the COVID-19 causative virus, severe acute respiratory coronavirus 2 (SARS-CoV-2), governments across the globe enacted stringent social distancing measures including stay-at-home orders and the temporary closure of non-essential businesses and schools (Wilder-Smith & Freedman, 2020). The profound economic, lifestyle, and social disruptions caused by these measures triggered a variety of mental health responses ranging in severity from feelings of low mood/worry to clinically significant levels of depression and anxiety (Barzilay et al., 2020; Every-Palmer et al., 2020; Fitzpatrick et al., 2020; Liu et al., 2020; Moccia et al., 2020; Pearman et al., 2020; Wang et al., 2020).

Romantic relationships where partners provide social support and comfort are a critical resource for mental health and well-being and may protect individuals against the negative mental health effects of challenging life events (Bruce et al., 2019; Florian et al., 2002; Pietromonaco & Collins, 2017). Indeed, being isolated at home during the pandemic prompted many individuals to rely more on their romantic partners as they dealt with varied stressors including health and safety concerns, working from home, and increased caregiving and housekeeping responsibilities (Donato et al., 2021; Evans et al., 2020; Günther-Bel et al., 2020; Williamson, 2020). However, the global nature of the COVID-19 pandemic and its impact on almost all aspects of social life make it a shared or dyadic stressor affecting both members of the couple. Thus, even though individuals may have initially turned to their partners for comfort and support, partners were also under extreme stress, which may have impaired their ability to provide support. This in turn may have weakened feelings of connection, decreased emotional disclosure, and increased withdrawal behaviors, resulting in relationship dissatisfaction and even dissolution over time (Bodenmann et al., 2006; Neff & Karney, 2009; Randall & Bodenmann, 2009).

The systemic transactional model of couples coping with stress

The systemic-transactional model (STM) (Bodenmann, 1997; Falconier et al., 2015) describes the ways in which partners cope with stress within the context of their relationship (i.e., dyadic coping) and posits that relational partners can respond to stress as interpersonal units. It also recognizes the interdependence between partners’ stress and the resources they bring to bear to cope with that stress. Mutual or common dyadic coping is one type of dyadic coping elicited in situations in which both partners are stressed that has
been linked to relationship satisfaction (Falconier et al., 2015), relationship stability (Bodenmann & Cina, 2006), and individual partners’ emotional well-being (Bodenmann et al., 2011). It involves both partners appraising a stressor as “our problem” and working together to maintain the quality of their relationship by engaging in cooperative actions (e.g., joint problem solving, mutual sharing and support) to manage the stressor. The idea is that through collaboration, the deleterious effects of stress on relationship satisfaction can be minimized; and, the couple can grow stronger and more resilient, having successfully coped with the stressor together (Gamarel & Revenson, 2015). Supporting this idea, under highly stressful circumstances, such as coping with the chronic or life-threatening illness of a partner, studies have found that engaging in common dyadic coping is associated with greater relationship satisfaction (Badr et al., 2010, 2018; Falconier & Kuhn, 2019; Meier et al., 2011) and has a stronger impact on long-term relationship outcomes than other forms of dyadic coping (Traa et al., 2015). Emerging evidence also suggests that common dyadic coping is associated with psychological well-being (Donato et al., 2021) and may help couples to maintain equilibrium during the COVID-19 pandemic (Williamson, 2020).

Preliminary research has examined the effects of dyadic coping on relationship satisfaction in the COVID-19 pandemic. Perceived partner responsiveness—the extent to which individuals believe their partner understands, validates, and cares for them—has been show to attenuate the effects of COVID-related stressors on relationship quantity (Balzarini et al., 2020). Similarly, perceived partner positive dyadic coping was found to moderate psychological distress and relationship quality (Randall et al., 2022). However, there has been minimal examination to date of the impact of pre-existing vulnerabilities and social contextual factors on these effects. As a result, this study seeks to further explore the moderating effect of common dyadic coping on the relationship between perceived stress and relationship satisfaction, while examining and controlling for sociodemographic and relationship characteristics and risk factors.

Risk and resilience models of couples’ coping

Despite the intriguing possibility that engaging in common dyadic coping may help to buffer couples from the adverse effects of stress experienced during the pandemic on their relationships, risk and resilience models (Chen & Bonanno, 2020; Prime et al., 2020) point out that changes in relationship satisfaction in the face of stress can be attributed to both risk-enhancing and protective factors. Given this, examining the potential buffering effects of common dyadic coping without also considering the effects of known risk factors for relationship dissatisfaction and dissolution (e.g., unemployment, economic hardship, being a member of a racial/ethnic minority group) (Barton & Bryant, 2016; Barton et al., 2018; Neff & Karney, 2004) may result in biased estimates because the added stress of the pandemic and pandemic-related social restrictions may exacerbate the effects of these pre-existing risk factors. Indeed, studies have found that younger aged individuals and non-cohabiting relationship partners experienced significant decrements in relationship satisfaction during the pandemic, suggesting these groups may have been
more vulnerable to the effects of pandemic-related restrictions (e.g., social distancing, stay at home orders) on their relationships (Biddle et al., 2020; Li et al., 2020).

Social contextual factors and vulnerable population subgroups

It is also possible that the myriad of stressors encountered during the pandemic heightened the risk for relationship dissatisfaction in otherwise low-risk groups. For example, even though social connection with other household members is generally viewed as an asset for married couples (Li et al., 2020; Okabe-Miyamoto et al., 2021), couples living in larger, or intergenerational households may have encountered new challenges such as increased anxiety regarding virus transmission or diminished supports for caregiving for elderly parents (Cohen et al., 2020; Park et al., 2020) that could have adversely affected their romantic relationships. Likewise, couples with children have had to balance work and increased childcare demands in the wake of school and daycare closings during the pandemic, which could have contributed to partner and relationship dissatisfaction (Overall et al., 2021; Schmid et al., 2021). Finally, in the early days of the pandemic, regional differences in cases, hospitalizations, and deaths – particularly in the North-eastern and Western regions of the US, may have contributed to variability in stress levels (Green et al., 2021), and disproportionately affected the relationships of couples living in these regions. Thus, by examining the confluence of these factors on changes in relationship satisfaction during the COVID-19 pandemic, vulnerable population subgroups can be identified, and more targeted interventions to address the negative relationship effects of the ongoing pandemic can be developed.

Present study

Based on the above, this population-based study examined the role that perceived stress, social contextual factors, and dyadic coping played in self-reported changes in relationship satisfaction during the initial COVID-19 lockdown period in the United States. We hypothesized that after controlling for relevant social contextual risk factors, engaging in common dyadic coping would buffer couples from the adverse effects of perceived stress during the pandemic on their relationship satisfaction.

Method

Sample and setting

This study reports on data obtained from a study of the psychosocial and health behavior impacts of the COVID-19 pandemic that was approved by the Baylor College of Medicine Institutional Review Board (H-47,505) (Badr et al., 2020). Eligible individuals were ≥ age 18, resided in the United States, and fluent in English or Spanish. Surveys were distributed via paid and unpaid social media advertisements and an online survey crowdsourcing platform between April 13th and June 8th, 2020. This recruitment window corresponded to the initial stay-at-home order period that was adopted by most of the United States.
Procedure

A waiver of written informed consent was obtained under Department of Health and Human Services (DHHS) regulations at 45 CFR 46.117(c) and the Common Rule. Recruitment advertisements and social media posts contained a web hyperlink that directed participants to the survey landing page, which contained a brief cover letter describing the purpose of the research, eligibility criteria and a plain language statement. If, after reading the cover letter, individuals were interested in participating, they checked a box to confirm understanding and consent to participate. The survey was administered online in English and Spanish on the Qualtrics survey platform (Provo, Utah). Participants could take up to 2 weeks to complete the survey. Given that accountability and validity can be more difficult to enforce in online research, attention checks (e.g., red herring questions), tactics to help prevent machine responses (e.g., Captcha) and participants taking the survey more than once (e.g., IP Control), and data quality checks (e.g., answer consistency and speed checks) were used.

Measures

Social contextual factors. Individuals were asked about their age, gender, race/ethnicity, education, if they were currently in a romantic relationship (yes/no), marital status, household income, number of household residents, whether they cohabited with a spouse/romantic partner (yes/no), romantic relationship length, whether they lived with someone over 65 (yes/no) or under 18 (yes/no), their employment status, and, if they were unemployed, whether they became unemployed due to the pandemic (yes/no). Individuals were additionally asked about their postal zip code and nearest cross streets to classify them into one of the four major US Census regions (Northeast, Midwest, South, and West).

Perceived stress. One of the most widely used methods of assessing stress has been the Perceived Stress Scale (PSS) (Cohen et al., 1983). The PSS was originally conceptualized as 14 items which ask general questions about how often individuals felt their lives were unpredictable, uncontrollable, and overloaded in the past month. A 4-item version of the PSS (PSS-4) was also developed (S. Cohen, 1988) that has demonstrated a clear advantage in terms of ease of use and online administration (Herrero & Meneses, 2006). Scores are summed to calculate a total score ranging from 0 to 16, with higher scores indicating greater perceived stress. In this study, instructions were modified slightly to ask individuals to report on stress, since they “became aware of the COVID-19 pandemic in the United States,” as opposed to the previous month. Internal consistency reliability (Cronbach’s alpha) in this study was $\alpha = .69$. This is consistent with a review conducted by Lee and colleagues (2012) which reported internal consistency reliability in studies using the PSS-4 ranging from 0.60 to 0.82. Many statisticians have suggested that alphas in the 0.65–0.80 range are acceptable (Cortina, 1993; DeVellis, 2003; Nunnally & Bernstein, 1994). Moreover, low reliability has been shown to affect Type II-not Type I-error, which makes it less likely to observe significant results but does not cause spuriously significant
findings (Rosenthal, 1995). Schmitt (1996) also demonstrated that reliabilities as low as 0.50 do not seriously attenuate validity coefficients and noted that the 0.70 alpha criterion for reliability may not always be appropriate for short scales. He further argued that when measures have other desirable properties such as meaningful content coverage, low alphas should not deter their use.

Common dyadic coping. Individuals who indicated that they were in a romantic relationship completed the 5-item common dyadic coping subscale of the Dyadic Coping Inventory (DCI) (Bodenmann, 2008; Ledermann et al., 2010), which describes what individuals and their partners do when they are both feeling stressed. Items were introduced as follows, “This section is about what you and your partner do to cope with the stress of the COVID-19 pandemic together.” Example items are, “We try to cope with the problem together and search for solutions,” “We engage in a serious discussion about the problem and think through what has to be done,” and, “We help one another to put the problem in perspective and see it in a new light.” Items were rated on a 5-point Likert-type scale (1 = “very rarely” to 5 = “very often”), and a mean score was computed. Cronbach’s alpha in this study was $\alpha = .88$.

Relationship satisfaction change. Individuals who indicated that they were in a romantic relationship were asked to rate the degree of happiness of their relationship prior to and since the COVID-19 pandemic on a scale of 1 (very unhappy) to 7 (perfectly happy). The delta (i.e., change) was computed by subtracting the relationship satisfaction score prior to the pandemic from the score since the pandemic (range of $-6$ to $6$).

Statistical analysis. Descriptive statistics were calculated including the mean (M), standard deviation (SD), median, range (for continuous variables), and relative frequency (for categorical variables). Welch’s t-test for unequal variances was run to compare our analysis sample mean PSS-4 scores to population norms. A bivariate correlation matrix was computed for continuous variables of interest. Univariate regression analyses were conducted to examine associations between each of the social contextual factors, perceived stress, and common dyadic coping score versus the relationship satisfaction change variable. Then, all the variables associated with relationship satisfaction change from the univariate regression analysis ($p < .05$) were subsequently entered into a separate multivariable linear regression model. Moderator analysis was conducted to determine the effect of common dyadic coping on the relationship between perceived stress and relationship satisfaction change. Procedures outlined by Aiken and West (1991) were used to test the simple slopes of the interaction and to facilitate visualization. A hierarchical regression whereby the multivariable model was estimated initially without and subsequently with the interaction term was run. Finally, a sensitivity power analysis was conducted (Cohen, 1988). All statistical analyses were performed in IBM SPSS Statistics 28.0.
Results

Sample characteristics

Of the 2435 adults who consented to participate, 213 were excluded because they did not pass our survey quality control and data quality checks. In total, 1106 (49.8%) of the 2222 participants who provided useable data indicated they were in a romantic relationship, and constituted the final study sample. Table 1 presents sociodemographic characteristics of the study sample. Overall, survey respondents were mostly middle aged (M = 44.82 years, SD = 14.90 years, median = 42, range = 19–93), college educated (73.3%), and married (72.3%). 83.4% of our sample indicated they cohabited with their spouse or romantic partner, and over 30% of respondents had been in their relationship for over 20 years. Only 6.4% of respondents were in a new relationship (<1 year). Of those who disclosed their gender, approximately 66.9% identified as cisgender women and 32% as cisgender men. Approximately two-thirds (67.5%) identified as white, and one-third (32.6%) identified as racial/ethnic minorities (14.1% Black, 11.8% Hispanic, 6.7% other). In terms of income/employment, 9.2% had an annual household income of less than $25K, 30.8% an income of $25K-$75K, and 60.0% of $75K or more. 57.9% of the sample reported working full time, and 13.1% reported pandemic-induced unemployment.

Table 2 displays the means and standard deviations of continuous variables as well as their bivariate correlations. The mean PSS-4 score was 6.72 out of 16 (SD = 2.97; Range = 0–16). This differed significantly from both US (M = 4.49, SD = 2.96, t (2034) = 20.39, p < .001) and British population norms (M = 6.11, SD = 3.14, t (2362) = 4.99, p < .001) (S. Cohen, 1988; Warttig et al., 2013). Thirty-nine percent of our study sample reported total PSS-4 scores greater than +1SD above the US population norm. The mean common dyadic coping score was 3.58 out of 5 (SD = 0.97; Range = 1–5). Participants reported that their average relationship satisfaction prior to the pandemic was 5.60 out of 7 (SD = 1.35; Range = 1–7), and that their average relationship satisfaction since the pandemic was 5.36 out of 7 (SD = 1.52). A paired samples t-test showed that the relationship satisfaction delta (−0.24) was significant (p < .001).

Univariate results

As Table 3 shows, individuals who were Black/African American, with annual household incomes below $75K, who were subjected to pandemic-induced unemployment, and who reported higher levels of perceived stress reported decrements in relationship satisfaction. Conversely, individuals who classified as “other” race (i.e., races other than non-Hispanic white, non-Hispanic black, and Hispanic), who were married, who had been in their relationships for longer periods of time, and who reported higher levels of common dyadic coping reported increases in relationship satisfaction.
Table 1. Sociodemographic characteristics of the study sample (n = 1106).

| Category                                      | N   | %    |
|-----------------------------------------------|-----|------|
| Age                                           |     |      |
| 18–30                                         | 206 | 18.8 |
| 31–50                                         | 516 | 47.1 |
| 51–65                                         | 254 | 23.2 |
| >65                                           | 119 | 10.9 |
| Gender                                        |     |      |
| Male                                          | 353 | 32.0 |
| Female                                        | 739 | 66.9 |
| Race/Ethnicity                                |     |      |
| White                                         | 740 | 67.5 |
| Black                                         | 155 | 14.1 |
| Hispanic                                      | 129 | 11.8 |
| Other                                         | 73  | 6.7  |
| Education                                     |     |      |
| Not college educated                          | 295 | 26.7 |
| College educated                              | 811 | 73.3 |
| Marital status                                |     |      |
| Unmarried                                     | 306 | 27.7 |
| Married                                       | 798 | 72.3 |
| Cohabits with spouse/romantic partner          |     |      |
| Yes                                           | 837 | 83.4 |
| No                                            | 166 | 16.6 |
| Relationship length                           |     |      |
| <1 year                                       | 71  | 6.4  |
| 1–5 years                                     | 239 | 21.7 |
| 6–10 years                                    | 174 | 15.8 |
| 10–15 years                                   | 166 | 15.1 |
| 15–20 years                                   | 112 | 10.2 |
| >20 years                                     | 339 | 30.8 |
| Annual household income                       |     |      |
| Less than $25K                                | 98  | 9.2  |
| $25,000 to $74,999                            | 328 | 30.8 |
| $75K or more                                  | 640 | 60.0 |
| Number of household residents                 |     |      |
| 1                                             | 119 | 10.8 |
| 2                                             | 395 | 35.9 |
| 3–4                                           | 456 | 41.4 |
| 5 or more                                     | 131 | 11.9 |
| Lives with someone > age 65                   |     |      |
| Yes                                           | 198 | 19.8 |

(continued)
As Table 4 and Figure 1 show, individuals who had higher levels of perceived stress ($B = -0.20$, 95% CI = $-0.30$ to $-0.11$) reported decrements in relationship satisfaction. Individuals who were classified as “other” race reported increases in relationship satisfaction ($B = .36$, 95% CI = $.06–.67$). Additionally, increasing relationship length ($B = .09$, 95% CI = $.03–.15$) was associated with increases in relationship satisfaction.

### Table 1. (continued)

|                                | N   | %   |
|--------------------------------|-----|-----|
| Lives with someone < age 18   |     |     |
| Yes                            | 456 | 45.9|
| No                             | 537 | 54.1|
| Employment status              |     |     |
| Working full time              | 639 | 57.9|
| Working part time              | 148 | 13.4|
| Retired                        | 115 | 10.4|
| Unemployed                     | 201 | 18.2|
| Pandemic-induced unemployment  |     |     |
| Yes                            | 108 | 13.1|
| No                             | 716 | 86.9|
| Region                         |     |     |
| Northeast                      | 188 | 17.2|
| Midwest                        | 155 | 14.2|
| South                          | 611 | 55.9|
| West                           | 139 | 12.7|

### Table 2. Correlations of continuous variables.

|                                | 1   | 2   | 3   | 4   | 5   | M   | SD  |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|
| 1. Age                         |     |     |     |     |     | 44.82| 14.90|
| 2. Number of household residents|     |     |     |     |     | 2.95 | 1.37|
| 3. Perceived stress            |     |     |     |     |     | 6.72 | 2.97|
| 4. Common dyadic coping        |     |     |     |     |     | 3.58 | .97 |
| 5. Relationship satisfaction change|     |     |     |     |     | -.24 | 1.16|

*denotes correlations significant at the 0.01 level. Perceived stress was measured using the Perceived Stress Scale (PSS-4), and scores were summed to calculate a total score ranging from 0 to 16 (higher scores indicate greater perceived stress). Common dyadic coping was assessed using the five-question common dyadic coping subscale of the Dyadic Coping Inventory (DCI); items were rated on a 5-point Likert-type scale, and a mean score was computed (higher scores indicate higher levels of common dyadic coping). Relationship satisfaction change was measured by asking participants rate the degree of happiness of their relationship prior to and since the COVID-19 pandemic on a scale of 1 (very unhappy) to 7 (perfectly happy) and calculating the delta (range of –6 to 6).

### Multivariable results

As Table 4 and Figure 1 show, individuals who had higher levels of perceived stress ($B = -0.20$, 95% CI = $-0.30$ to $-0.11$) reported decrements in relationship satisfaction. Individuals who were classified as “other” race reported increases in relationship satisfaction ($B = .36$, 95% CI = $.06–.67$). Additionally, increasing relationship length ($B = .09$, 95% CI = $.03–.15$) was associated with increases in relationship satisfaction.
Table 3. Univariate linear regression analyses showing relationship satisfaction change as a function of individual-level determinants.

| Predictors                        | Unstandardized coefficients | Standard error | p-value |
|-----------------------------------|-----------------------------|----------------|---------|
| **Age**                           |                             |                |         |
| 18–30 Ref                         |                             |                |         |
| 31–50                             | .04                         | .10            | .71     |
| 51–65                             | .07                         | .11            | .53     |
| >65                               | .03                         | .13            | .82     |
| One unit increase                 | .00                         | .00            | .89     |
| **Gender**                        |                             |                |         |
| Female Ref                        |                             |                |         |
| Male                              | -.09                        | .08            |         |
| **Race/Ethnicity**                |                             |                | <.001   |
| White Ref                         |                             |                |         |
| Black                             | -.30                        | .10            | <.01    |
| Hispanic                          | -.11                        | .11            | .34     |
| Other                             | .36                         | .14            | .01     |
| **Education**                     |                             |                | .13     |
| Not college educated Ref          |                             |                |         |
| College educated                  | .12                         | .08            | <.001   |
| **Marital status**                |                             |                |         |
| Unmarried Ref                     |                             |                | <.001   |
| Married                           | .28                         | .08            |         |
| Cohabits with romantic partner    |                             |                | .48     |
| No                                | Ref                         |                |         |
| Yes                               | .07                         | .10            |         |
| **Relationship length**           |                             |                | <.001   |
| No                                | Ref                         |                |         |
| Yes                               | .09                         | .02            | <.001   |
| **Annual household income**       |                             |                | <.01    |
| $75K or more Ref                  |                             |                |         |
| Predictors                              | Unstandardized coefficients | Standard error | p-value |
|----------------------------------------|-----------------------------|----------------|---------|
| $25K to $75K/C0                        | -.19                        | .08            | .01     |
| Less than $25K/C0                      | -.32                        | .12            | .01     |
| Number of household residents          |                             |                |         |
| One unit increase                      | .04                         | .03            | .09     |
| Lives with someone > age 65            |                             |                | .23     |
| No                                     | Ref                         |                |         |
| Yes                                    | -.11                        |                | .09     |
| Lives with someone < age 18            |                             |                | .19     |
| No                                     | Ref                         |                |         |
| Yes                                    | -.09                        |                | .07     |
| Employment status                      |                             |                | .25     |
| Working full time                      | Ref                         |                |         |
| Working part time                      | -.10                        | .11            | .36     |
| Retired                                | -.04                        | .12            | .76     |
| Unemployed                             | -.19                        | .09            | .05     |
| Pandemic-induced unemployment          |                             |                | .02     |
| No                                     | Ref                         |                |         |
| Yes                                    | -.30                        | .11            | .20     |
| Region                                 |                             |                |         |
| Northeast                              | Ref                         |                |         |
| Midwest                                | .04                         | .12            | .72     |
| South                                  | .13                         | .09            | .16     |
| West                                   | -.06                        | .13            | .67     |
| Perceived stress                       | -.05                        | .01            | < .001  |
| Common dyadic coping                   | .31                         | .04            | < .001  |
significant interaction for perceived stress x common dyadic coping was also found (B = .05, 95% CI = .02–.07). The hierarchical regression model without the interaction had $R^2 = 0.11$ and $F = 9.12$ ($p < .001$), and the subsequent model including the interaction showed improvement to $R^2 = .13$, $\Delta R^2 = .02$, $F$ change = 14.07 ($p < .001$), and $F = 9.72$ ($p < .001$). All statistics associated with the hierarchical regression model are shown in Supplemental Table 1. An effect-size sensitivity power analysis performed in G*Power version 3.1 indicated that our sample size was sufficient to detect small effect sizes ($\alpha = 0.05$, $\beta = 0.80$, $f^2 = 0.007$) (Cohen, 1988; Faul et al., 2007, 2009).

As Figure 2 shows, tests of the simple slopes revealed that individuals with high (+1 SD) levels of common dyadic coping reported slight increases in relationship satisfaction under conditions of high perceived stress (+1 SD). However, this difference was not significant ($b_1 = .02, t (735) = 1.12, p = .26$). In contrast, individuals who had low levels of common dyadic coping (−1 SD) reported decrements in relationship satisfaction, and this negative association was significantly amplified for individuals who had high perceived stress ($b_2 = −0.07, t (735) = −3.72, p < .001$).

### Table 4. Multivariable linear regression analysis showing relationship satisfaction change as a function of individual-level determinants and the moderating role of common dyadic coping.

| Predictors                        | Unstandardized coefficients | Standard error | p-value |
|-----------------------------------|-----------------------------|----------------|---------|
| Race/Ethnicity                    |                             |                |         |
| White                             | Refer                       |                |         |
| Black                             | −.18                        | .13            | .15     |
| Hispanic                          | .03                         | .13            | .81     |
| Other                             | .36                         | .16            | .02     |
| Marital status                    |                             |                |         |
| Unmarried                         | Refer                       |                |         |
| Married                           | −.01                        | .11            |         |
| Relationship length               | .09                         | .03            | < .01   |
| Annual household income           |                             |                |         |
| $75K or more                       | Refer                       |                |         |
| $25K to $75K                      | −.07                        | .09            | .47     |
| Less than $25K                    | −.09                        | .14            | .55     |
| Pandemic-induced unemployment     |                             |                |         |
| No                                | Refer                       |                |         |
| Yes                               | −.24                        | .12            |         |
| Perceived stress                  | −.20                        | .05            | < .001  |
| Common dyadic coping              | −.05                        | .10            | .63     |
| Common dyadic coping x perceived stress moderator | .05 | .01 | < .001 |
This population-based study examined the role of perceived stress, social contextual factors, and dyadic coping in self-reported changes in relationship satisfaction during the COVID-19 lockdown period in the United States. After controlling for social contextual factors, our multivariable analysis revealed that higher levels of perceived stress were associated with lower levels of relationship satisfaction. Additionally, a significant interaction for perceived stress x common dyadic coping was found, suggesting that engaging in common dyadic coping buffered individuals from the adverse effects of perceived stress on their relationships. Specifically, individuals who engaged in high levels of common dyadic coping reported small non-significant improvements in relationship satisfaction regardless of their level of perceived stress, whereas individuals who engaged in low levels of common dyadic coping reported increasingly larger decrements in relationship satisfaction as their perceived stress levels increased. Overall, these findings are consistent with the STM as well as with previous studies that have found that dyadic coping moderates the negative effects of stress on relationship outcomes (Balzarini...
et al., 2020; Bodenmann et al., 2010; Falconier et al., 2015; Fallahchai et al., 2019; Randall et al., 2022). Moreover, they affirm the importance of examining stress and coping in a dyadic context (Randall & Bodenmann, 2017), and underscore the idea that the way in which couples manage shared stress together may be an important determinant of relationship satisfaction (Badr et al., 2010; Falconier & Kuhn, 2019; Fallahchai et al., 2019).

It is important to emphasize that after controlling for social contextual factors, we found that relationships of individuals who reported engaging in higher levels of common dyadic coping were more resilient than those who reported lower levels of common dyadic coping. Thus, even though couples who entered the pandemic with pre-existing contextual vulnerabilities may be at increased risk for developing relationship dissatisfaction, those individuals may still fare well and possibly even realize the potential for relationship growth and improvement if they engage in adaptive relationship processes. These findings add to the literature by showing that engaging in pro-relationship processes are important for couples’ adaptation during the pandemic (Donato et al., 2021; Ogan et al., 2021).

Overall, survey respondents reported perceived stress levels that were higher than established population norms. With regard to perceived stress, we found that 38.9% of individuals scored greater than +1SD above the U.S. population norm on the PSS-4, which is indicative of high levels of stress. This finding aligns with studies showing...
increased prevalence of stress, depression, and anxiety in response to natural disasters and other significant adverse life events (Beaglehole et al., 2018; Ehring et al., 2011; Norris et al., 2002; Rubonis & Bickman, 1991). It also highlights the importance of enriching and fortifying couple relationships during the pandemic, given that relationships are a critical resource for mental health and well-being (Bruce et al., 2019; Florian et al., 2002; Pietromonaco & Collins, 2017) and may help to protect individuals against the negative mental health effects of the pandemic. Viewed together, these findings uniquely emphasize the heightened stress experienced by individuals during the pandemic and the potential detrimental effects of that stress on couple relationships. They also suggest that engaging in common dyadic coping may help to buffer couples from the adverse effects of the pandemic on their relationships. As such, common dyadic coping may be an important target to consider in relationship education programs and interventions to assist couples during the ongoing pandemic and future pandemics/natural disasters.

Limitations and future directions

This study has several strengths. First, it is one among the largest studies to date investigating the perceived effects of the pandemic on relationship satisfaction. Second, our study sample was racially, ethnically, socioeconomically, and geographically diverse, which increases generalizability. Third, our study was grounded by a risk and resilience framework, which will facilitate development of future interventions. Fourth, although there is always the possibility of hidden confounders, we employed a robust analytic approach that minimized the risk of omitted variable bias by controlling for a variety of social contextual factors that have been previously shown to be associated with decrements in relationship satisfaction (e.g., race/ethnicity, household income, marital status). Moreover, our findings bolster and extend previously published research (Falconier et al., 2015; Papp & Witt, 2010) suggesting that common dyadic coping is an important resource for couples in times of stress by demonstrating that it attenuates the effects of stress on relationship satisfaction.

Study limitations include the cross-sectional nature of the data, which indicates findings represent a snapshot in time. Although we asked individuals to report on their stress since the pandemic, we cannot definitively conclude that their stress was caused solely by the pandemic. However, studies have demonstrated elevated stress levels across the globe during the early days of the pandemic (American Psychological Association, 2020; Kowal et al., 2020), which is when this study was conducted. Thus, it is reasonable to assume that at least some proportion of the stress that was reported during that time was due to factors related to the pandemic. Additionally, due to the cross-sectional nature of the dataset, the study included a retroactive report of relationship satisfaction, which may be prone to be influenced by concurrent perceptions and emotions (Ogolsky & Surra, 2014). However, this limitation is partially mitigated by the relatively short period of time which elapsed since lockdowns began (March 2020) and survey administration (April to June 2020). We did not recruit both members of a couple, so we are unable to examine the interplay between dyad members. We also did not ask study participants for their disability status or sexual orientation. As such, we were unable to examine the effects of
stress and common dyadic coping on relationship satisfaction in different relationship types, which may be a potential area for further research. Additionally, a single item measure of relationship satisfaction was used, which may be expanded to more robust measures of satisfaction in the future. Finally, individuals from all 50 states completed the survey, but most hailed from urban areas and 56% of our survey sample resided in the Southern region of the United States, limiting generalizability. However, this is partially mitigated by the large and diverse sample.

Conclusion

Findings from this study can be used to inform future research, interventions, and policy efforts aimed at improving relationship resilience during and beyond the current pandemic. Although we found that some individuals perceived decrements relationship satisfaction, engaging in common dyadic coping helped to buffer individuals from the adverse effects of stress that they experienced during the early months of the pandemic on their relationships. This knowledge could be applied to future pandemics or other crises that are experienced on a national or global scale (e.g., natural disasters) to better understand how relationships can be affected and to inform the development of preventive and/or therapeutic interventions. For example, given the demonstrated associations between dyadic coping and relationship satisfaction, couples may benefit from prevention-focused psychoeducational programs that seek to increase their awareness of the potential benefits of taking a “we” approach to stress. In a similar vein, clinicians could help couples to attribute the stress they are experiencing to external factors as opposed to their partner (Bradbury & Fincham, 1990) or relationship in an effort to diffuse tension, inspire more collaborative coping and decision making, and strengthen relationships during times of acute stress. Given that stressful life events may catalyze greater scrutiny and evaluation of romantic relationships, couples may also benefit from dyadic coping skills training programs such as the Couples’ Coping Enhancement Training (CCET) (Bodenmann & Shantinath, 2004) that teach couples joint problem-solving skills and ways they can effectively solicit and provide responsive support (Bodenmann & Randall, 2012; Kayser et al., 2007), so they can negotiate goals, create shared meaning, and recover control over their lives (Cohan & Cole, 2002).

Finally, on a policy level, we hope our findings will inform discussions regarding how mental health care professionals – including marriage and family therapists, who were already struggling to meet the treatment need prior to this pandemic (Kohn et al., 2004) may now need to accommodate increased demand. Improving systems for identifying vulnerable couples and bolstering their access to support services through online programs and telehealth may provide improved outcomes. Likewise, public campaigns that address the toll of the pandemic on relationships, promote adaptive dyadic coping strategies, and disseminate useful information on how to access support services will also be critical.
Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: HB and CA’s work on this study was supported by OT2HL158258 (PI: Vishwantha). XZ and SAR were supported by the Research Training Award for Cancer Prevention Post-Graduate Training Program in Integrative Epidemiology from the Cancer Prevention and Research Institute of Texas (grant number RP160097, PI: M. Spitz). This study was also supported by the facilities and resources of the Dan L Duncan Comprehensive Cancer Center P30 CA125123.

Open research statement

As part of IARR’s encouragement of open research practices, the authors have provided the following information: This research was not pre-registered. The data used in the research are available. The data can be obtained by emailing: hoda.badr@bcm.edu. The materials used in the research are available. The materials can be obtained by emailing: hoda.badr@bcm.edu.

Supplemental material

Supplemental material for this article is available online.

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