

Blame the Pandemic: Buffering the Association Between Stress and Relationship Quality

During the COVID-19 Pandemic

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### Abstract

The COVID-19 pandemic created a unique climate for examining the links between stressful conditions and couples' relationship well-being. According to theories of stress spillover, stressors originating outside the relationship, such as work stress and financial uncertainty, often undermine relationship quality. However, if individuals can easily attribute their problems to the stressful circumstances, their relationship may be more resilient. Given the salience of the pandemic, the current study used two waves of 14-day daily diary data collected from 191 participants to examine whether blaming the pandemic for problems may reduce stress spillover. We also expected the buffering effect of pandemic blaming attributions to wane as stressful conditions persisted and continued to tax partners' coping resources. Multilevel modeling confirmed that women, but not men, who were more blaming of the pandemic exhibited reduced stress spillover during the COVID-19 outbreak; notably, this buffering effect did not weaken over time.

Keywords: STRESS SPILLOVER, COVID-19, RELATIONSHIP QUALITY,  
ATTRIBUTIONS

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During the COVID-19 Pandemic

The mandatory stay-at-home orders enacted throughout much of the United States during the early stages of the COVID-19 pandemic required many couples to abruptly restructure their day-to-day lives. Almost overnight, couples were unexpectedly facing a multitude of new stressful life circumstances, such as working remotely, handling homeschooling responsibilities, safeguarding the health and well-being of loved ones, and confronting financial uncertainty due to an unstable economy. Unfortunately, coping with stressful circumstances often takes a toll on couples' relationships (Neff & Karney, 2017; Randall & Bodenmann, 2009). Managing stress tends to drain individuals' energy and cognitive resources (Hobfoll, 1989), which can hamper positive relationship dynamics between partners, a phenomenon referred to as stress spillover. For example, on days when individuals experience greater stress outside the relationship, they are more likely to express criticism, anger, or impatience toward their partner, as well as to appraise their relationship in a more negative light compared to days when they experience less stress (Buck & Neff, 2012; Falconier et al., 2015; Story & Repetti, 2006). These spillover effects have been partially explained by the extent to which individuals report feeling anxious, irritable, and/or burned out due to their stress (Buck & Neff, 2012; Story & Repetti, 2006). Therefore, when the pandemic began, scholars suggested the myriad stressful life circumstances created by the pandemic may increase tension between partners and reduce relationship happiness (Pietromonaco & Overall, 2020).

However, this perspective overlooks the fact that not all stressors are alike. Although stress frequently has corrosive effects on relationship well-being, in some cases, stressful circumstances can affirm relational bonds between partners (e.g., Cohan & Cole, 2002; Cohan et

al., 2009). In fact, converging evidence suggests that when stressors are highly salient, affect large numbers of people, and are relatively uncontrollable, individuals can more easily attribute their problems to the stressful circumstances, which renders their relationship more resilient to the harmful effects of that stress (Clavé et al., 2017; Diamond & Hicks, 2012). Consequently, given the unique features of the COVID-19 pandemic – namely, the salience, scope, and uncontrollability of the stress it created - the goal of the current study was to examine whether blaming the pandemic for one's problems might mitigate stress spillover within relationships.

### **Stressor Salience and Attributions: Can Awareness of Stress Weaken Spillover?**

Given the importance of stressful life contexts for relationship quality, growing research has aimed to identify the conditions under which couples are more versus less susceptible to experiencing stress spillover. One theme emerging from this literature is that the damaging effects of stress may be reduced when partners are aware of the impact stress is having on their relationship functioning. For example, researchers have argued that stressor salience may account for why the effects of major stressors (e.g., severe illness, natural disasters) on relationship quality are less consistent compared to the effects of minor stressors (e.g., difficult work day, getting stuck in traffic; Randall & Bodenmann, 2009). Unlike minor stressors, which often negatively color partners' thoughts and behaviors within the relationship unknowingly (Tesser & Beach, 1998), major stressors are highly salient and thus tend to mobilize coping and support efforts between partners, particularly if the event is perceived as an uncontrollable stressor for which neither partner is to blame (Bodenmann, 2005; McCubbin & Patterson, 1983). In other words, when faced with major stressful events, the ability to shift blame for relational distress away from each other and onto the stressor may inspire partners to unite in the face of a common threat (Clavé et al., 2017; Diamond & Hicks, 2012). Consequently, to the extent that

partners possess adequate coping resources for addressing the stressors, couples can emerge from major stressful experiences relatively unscathed.

In fact, several recent studies specifically examining couples facing uncontrollable, large-scale societal stressors support the notion that blaming the stressor may have protective effects. Research on African-American and Chinese-American couples demonstrates that experiences of racial discrimination, which are uncontrollable events unlikely to be blamed on the partner, often predict greater marital warmth and increased support in couples over time (Clavél et al., 2017; Hou et al., 2017). In these studies, however, partners' stress attributions were assumed rather than directly measured. To our knowledge, the only study to explicitly assess whether blaming the stressor may attenuate stress spillover examined partners' attributions for their money problems during the Great Recession (Diamond & Hicks, 2012). Financial stress is generally a robust predictor of poor relationship functioning (Falconier & Jackson, 2020), yet during the economic recession of 2007-2009, the underlying cause of couples' financial difficulties was highly salient (i.e., a poor economy). Therefore, during this period, partners were more likely to blame the recession for their money problems than they were to blame each other; moreover, this tendency to blame the national economic crisis weakened the link between financial difficulties and relationship satisfaction (Diamond & Hicks, 2012).

Given the paucity of work directly examining individuals' stressor blaming attributions, the first aim of the study was to further investigate the potentially salubrious effects of blaming the stressor for relationship well-being. Indeed, the COVID-19 pandemic provided a context uniquely suited for examining this issue. Although the pandemic created unprecedented circumstances that were quite stressful, the cause of that stress was highly salient and largely uncontrollable. As these conditions may encourage partners to blame the pandemic, we

examined whether the tendency to blame the COVID-19 pandemic for one's difficulties may attenuate the link between individuals' daily stress and their relationship appraisals and behaviors.

### **Do the Benefits of Blaming the Stressor Fade Over Time?**

Unfortunately, the beneficial effects of pandemic blaming attributions may fade as the stressful circumstances created by the pandemic persist and continue to tax partners' coping resources. Although highly salient stressors often mobilize coping efforts, if the stressful circumstances exceed couples' coping abilities, the relationship ultimately may suffer. For instance, a classic study examining the differential effects of low, moderate, and high stress on relationship satisfaction revealed a nonlinear association between stress levels and relationship well-being (Tesser & Beach, 1998). As stress increased from low to moderate, relationship satisfaction decreased; that is, partners exhibited typical spillover effects. At moderate stress, however, the association between stress and relationship satisfaction was substantially weaker. At this point, partners seemingly became aware that stress was influencing their relational judgments and worked to correct for those damaging stress effects. Yet, as stress continued to rise from moderate to high, spillover effects again emerged, suggesting that partners are capable of containing the harmful effects of stress when their stress reaches a level that is salient, but not so exacting as to overwhelm their coping efforts.

Based on these ideas, the second aim of the study was to examine whether the strength of the buffering effect of pandemic blaming attributions may change over time. In the early stages of the COVID-19 outbreak, blaming the pandemic may reduce the association between stressful circumstances and relationship well-being. Nevertheless, as the pandemic continued to interfere with daily life and persistently drained partners' energy and resources, stressful circumstances

may take a greater toll on relationship well-being. Indeed, some prior research suggests that although highly salient stressors, such as natural disasters, may initially unite couples and boost relationship quality, the lingering stress resulting from these events (e.g., rebuilding homes and communities) can disrupt adaptive relational processes over time (Cohan, 2010; Marshall et al., 2017; Williamson et al., 2021). In the same vein, we expected that although blaming the pandemic would weaken stress spillover initially, those protective effects may dissipate as the pandemic wore on.

### **Overview of the Current Study**

To investigate whether attributing stress to the COVID-19 pandemic mitigates stress spillover, this study utilized data collected during the early weeks of the COVID-19 outbreak in the United States (Wave 1) and again seven months later (Wave 2). At both waves, participants completed a background questionnaire, which assessed how much they blamed the pandemic for their problems. Next, participants completed a 14-day daily diary survey assessing their daily life stressors, their daily relationship satisfaction, and their reports of the negative behaviors they enacted toward their partner that day. Consistent with prior research (e.g., Buck & Neff, 2012), stress spillover was defined as the within-person association between daily stressful experiences and daily relational outcomes (i.e., either relationship satisfaction or perceived negative behaviors). We predicted that pandemic blaming attributions would moderate stress spillover, such that participants who were more blaming of the pandemic for their problems would maintain higher levels of relationship satisfaction and report enacting fewer negative relational behaviors on days in which they experienced greater stress compared to participants who were less blaming of the pandemic. However, and consistent with the notion that partners may become increasingly overwhelmed and burned out as the disruptions caused by the pandemic persisted,

we also predicted that the buffering effect of pandemic blaming attributions would diminish in strength over the course of the study. The pre-registration of the hypotheses and analytic plan for this study can be found here (<https://osf.io/ewqdp/>).<sup>1</sup>

## Method

### Participants

As the overarching goal of the project was to understand the daily lives of couples who were sheltering-in-place together, individuals who were living with their partner during the initial shelter-in-place orders and were at least 18 years old were recruited to participate via advertisements posted on several social media outlets (e.g., Facebook, Instagram, Twitter, Nextdoor neighborhood groups). The advertisements directed individuals to a website that provided additional study details and an email contact for expressing interest in the study. Although both couple members were encouraged to participate, individuals had the option to participate without their partner. We constrained data collection to a period when many areas were under a shelter-in-place order; thus, participant recruitment occurred during the three-week period between 4/15/2020 and 5/5/2020 and data collection occurred between 4/16/2020 and 5/21/2020. For this reason, sample size was primarily determined by our ability to recruit participants quickly, coupled with funding constraints. A second study wave was not originally planned, however, given the ongoing severity of the pandemic, we asked participants to take part in a follow-up assessment, which occurred seven months after the initial assessment (i.e., 11/17/20 to 12/20/20).

Initially, 227 individuals enrolled in the study; however, 17 individuals withdrew before providing any data and 6 individuals withdrew before beginning the daily diary task. Two

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<sup>1</sup> Our pre-registration is based on the first wave of data only. When revising the paper, a second wave of data was collected and included in the analyses.



couples (4 individuals) were identified as fake participants (see supplemental materials for more information). Therefore, the eligible sample consisted of the 200 participants (82 men, 115 women, and 3 individuals who identified as non-binary) who both completed the background questionnaire and participated in the diary task. However, four same-gender (female) dyads and one non-binary individual participating without their partner were not included in the analyses as our analytic approach required partners to be distinguishable.<sup>2</sup> Two participants who identified their gender as non-binary/queer had partners who identified as heterosexual (one woman and one man). The partners' identification allowed us to treat them as distinguishable dyads and retain them in analyses. Thus, dyad members are referred to as women/non-binary (W/NB) individuals and men/non-binary (M/NB) individuals. The final sample, then, consisted of 191 individuals (81 couples and 29 individuals participating without their partner). Participants ranged in age from 21 to 83 (median age=31) and individuals' median income was between \$40,000-\$49,000 USD. On average, married participants were married 16.43 years ( $SD = 17.24$ ) and dating participants had been with their partner 4.77 years ( $SD = 4.78$ ). Additional demographic information can be found in Tables 1 and 2.

At Wave 2, 134 participants (70.2%; 55 couples and 24 individuals participating without their partner) completed the background questionnaire and participated in the diary task. Participants who provided data at Wave 2 did not differ from those who did not in terms of their demographics or any variables of interest (e.g., attributions, daily variables) collected at Wave 1.

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<sup>2</sup> A larger sample of indistinguishable couples is required to reliably account for dependency between partners when retaining both distinguishable and indistinguishable dyads in the analyses. See supplemental materials for additional information.

**Table 1***Demographic Information at Wave 1*

Variable	Total (N = 191)	Men/NB (n = 83)	Women/NB (n = 108)
<b>Race (n / %)</b>			
White	157 (82.2%)	67 (80.7%)	90 (83.3%)
Multi-racial	8 (4.2%)	3 (3.6%)	5 (4.6%)
Black/African American	9 (4.7%)	5 (6.0%)	4 (3.7%)
Middle Eastern	4 (2.1%)	0	4 (3.7%)
Chinese	4 (2.1%)	2 (2.4%)	2 (1.9%)
American Indian	2 (1.0%)	1 (1.2%)	1 (.9%)
Japanese	2 (1.0%)	1 (1.2%)	1 (.9%)
Vietnamese	1 (.5%)	1 (1.2%)	0
Pacific Islander	1 (.5%)	1 (1.2%)	0
Asian Indian	1 (.5%)	1 (1.2%)	0
Other	1 (.5%)	1 (1.2%)	0
<b>Ethnicity (n / %)</b>			
White/ Non-Hispanic	160 (83.8%)	67 (80.7%)	93 (86.1%)
Hispanic, Latino or Spanish origin	31 (16.2%)	16 (19.3%)	15 (13.9%)
<b>Highest level of education (n / %)</b>			
High School/GED	13 (6.8%)	11 (13.3%)	2 (1.9%)
Associates/Vocational	17 (8.9%)	9 (10.8%)	8 (7.4%)
Bachelors	90 (47.1%)	38 (45.8%)	52 (48.1%)
Master's	50 (26.2%)	19 (22.49%)	31 (28.7%)
Ph.D., MD, DDS, etc.	21 (11.0%)	6 (7.2%)	15 (13.9%)
<b>Employment (n / %)</b>			
Full time employment	112 (63.4%)	58 (69.9%)	54 (50.0%)
Part time employment	11 (5.7%)	3 (3.6%)	8 (7.4%)
Student	20 (10.5%)	6 (7.2%)	14 (13.0%)
Retired	20 (10.5%)	8 (9.6%)	12 (11.1%)
Other	28 (14.7%)	8 (9.6%)	20 (18.5%)
Essential worker (n / %)	32 (16.8%)	18 (21.7%)	14 (13.0%)
Experiencing reduced work hours/pay (n / %)	28 (16.4%)	10 (12.0%)	18 (16.7%)

*Note:* NB = non-binary.

**Table 2***Demographic Information at Wave 1: Dyads versus Solo Participants*

Variable	Dyads (n = 81)	Solo Participants (n = 29)
Relationship status (n / %)		
Married	40 (49.4%)	19 (65.5%)
Dating	41 (50.6%)	10 (34.5%)
Lived together pre-pandemic (n / %)	71 (87.7%)	26 (89.7%)
Parent (n / %)	16 (19.8%)	8 (27.6%)
# of children < 18 years old (M/SD)	1.9 (.76)	1.8 (.71)
Region (n / %)		
U.S. West	11 (13.6%)	4 (13.8%)
U.S. Midwest	10 (12.3%)	6 (20.7%)
U.S. South	51 (70.0%)	15 (51.7%)
U.S. Northeast	8 (9.9%)	4 (13.8%)
Canada	1 (1.2%)	0

*Note.* Dyads = both couple members participated.

Solo participants = only one couple member participated.

**Procedure**

At both waves, participants completed an online background questionnaire before beginning a 14-day diary task. Each evening, we sent individuals a unique link to the daily survey, which was only available to participants between the hours of 8pm and 3am to ensure study compliance (i.e., prevent completion of two surveys on one day). At Wave 1, individuals received a \$5 Amazon gift card for completing the background questionnaire and a \$15 gift card for completing the diary task. If both couple members participated in the study, the couple received a \$10 bonus gift card. Moreover, all participants were entered into a lottery to win one of six \$100 Amazon gift cards. At Wave 2, these amounts were increased to \$10 for the background questionnaire and \$25 for the diary task. Again, couples received a \$10 bonus gift card if both couple members participated.

On average, participants completed 12.5 ( $SD=2.7$ ) and 11.7 ( $SD=2.7$ ) daily surveys at Waves 1 and 2, respectively. Overall, participants provided a total of 3,971 days of data. The specific measures used in the current paper are provided in the supplemental materials. For a complete overview of the study protocol, see <https://osf.io/ewqdp/>.

## **Measures**

### ***Stress Attributions***

As part of the background questionnaire at each wave, participants indicated their agreement with three statements regarding blame for their current stress. Similar to prior research (Diamond & Hicks, 2012), participants were asked to report the extent to which they blamed the self, the partner, and the global health crisis for their current stressors/problems (1 = *completely disagree*, 5 = *completely agree*). Given the hypotheses, the main analyses focused on the item assessing pandemic blaming attributions. However, additional exploratory analyses examining the role of participants' partner blaming attributions for stress spillover are presented in the supplemental materials.

### ***Daily Stress***

As part of the daily survey, participants were presented with 11 life domains (e.g., household chores/maintenance, work or school, finances/money) and were asked to rate the extent to which they experienced stress/problems in each domain that day (0 = *Not at all* and 4 = *A lot*). If a life domain was not relevant to the individual (e.g., homeschooling), they were asked to select "not applicable" and this item was omitted from the participant's daily stress score. One of these 11 items provided an option to report a source of stress not otherwise represented in the measure. As our purpose was to capture stressors external to the relationship, if a participant wrote in a relational stressor (e.g., conflict with their romantic partner), that item was not

included in the participant's final score. We calculated composite scores of daily stress by averaging the items rated each day for each participant, with higher scores indicating greater stress.

### ***Daily Relationship Quality***

We assessed daily relationship quality in two ways. First, to assess daily relationship appraisals, participants completed three items modified from the Kansas Marital Satisfaction Scale (Schumm, et al., 1986; e.g., "How satisfied are you with your relationship with your partner today?"). Participants responded to items on a 7-point scale ranging from 1 (*very unsatisfied*) to 7 (*very satisfied*). We created an average score for each individual on each day, with higher scores indicating greater relationship satisfaction. This scale was highly reliable both between- and within-persons, and for detecting change over time (all alphas  $\geq .89$  for both partners; see Cranford et al., 2006 for a discussion of reliability estimates for daily measures).

Second, given work linking external stress to increases in individuals' perceptions of their negative behaviors enacted toward the partner (Buck & Neff, 2012), we assessed individuals' daily negative relationship behaviors. Participants were presented with a checklist of 15 behaviors they may have engaged in that day and asked indicated whether they had enacted any of those behaviors (0 = *no*, 1 = *yes*). Four of these items were summed each day for each participant to capture negative behaviors enacted toward a partner: (1) you criticized or insulted your partner (even if you did not mean to), (2) you showed anger or impatience toward your partner, (3) you did or said something to make your partner feel unwanted (even if you did not mean to) and (4) you were withdrawn or distant from your partner.<sup>3</sup>

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<sup>3</sup> As seen in the supplemental materials, of the remaining 11 items, 7 items captured positive or supportive behaviors (e.g., you provided your partner with encouragement, you expressed gratitude to your partner) and 3 items captured non-relational behaviors (e.g., you exercised today). Because prior work reliably links stress to negative, but not positive, behaviors (e.g., Buck & Neff, 2012), our analyses focused on negative behaviors. One item (you got on

## **Analytic Plan**

We used multilevel modeling techniques (MLM) to test our hypotheses. Using the MIXED procedure in SAS 9.4 (SAS Institute, 2020), we modeled both within- and between-person effects using a dual intercept approach that estimated women/non-binary individuals' and men/non-binary individuals' coefficients simultaneously and separately. The covariance matrix of the residuals was structured such that same-day correlations allowed for residuals within each couple and cross-day correlations with a first-order autoregressive pattern allowed for residuals within each person, accounting for dependency within couples and across days. A strength of the MLM approach is that individuals with missing days or partners (i.e., those whose partners chose not to participate) can be retained in the analyses. Contrast analyses investigated whether the coefficients for women/non-binary individuals and men/non-binary individuals significantly differed. The data and analytic code used in this paper are provided on the project OSF page.

## **Results**

### **Descriptive Statistics and Preliminary Analyses**

Table 3 presents means and standard deviations for all variables. In general, participants were relatively satisfied in their relationship and reported low levels of daily stress. Overall, participants reported enacting negative behaviors toward their partner on 27.8% and 20.1% of days at Waves 1 and 2, respectively. Notably, and supporting the notion that salient, uncontrollable stressors may encourage partners to place blame for their difficulties on the stressor, participants were generally more blaming of the pandemic for their problems during

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your partner's nerves) was not included in the measure of negative behaviors enacted toward a partner as it is unclear whether getting on a partner's nerves is due to the negative behavior of the individual or due to the mood state of the partner, irrespective of the individual's actual behavior.

**Table 3***Descriptive Statistics*

Variable	Wave 1 Mean (SD)	Wave 2 Mean (SD)	Possible range
<b>Women/Non-binary Individuals</b>			
Daily Negative Behavior	0.51 (0.46)	0.42 (0.46)	0 - 4
Daily Relationship Satisfaction	5.54 (1.10)	5.61 (1.13)	1 - 7
Daily Stress	0.69 (0.50)	0.69 (0.41)	0 - 4
Pandemic Blaming Attributions	3.77 (1.06)	3.79 (0.92)	1 - 5
Self Blaming Attributions	2.09 (1.14)	2.30 (1.05)	1 - 5
Partner Blaming Attributions	1.81 (1.02)	2.06 (1.10)	1 - 5
<b>Men/Non-binary individuals</b>			
Daily Negative Behavior	0.43 (0.58)	0.31 (0.48)	0 - 4
Daily Relationship Satisfaction	5.70 (0.99)	5.83 (1.11)	1 - 7
Daily Stress	0.60 (0.41)	0.58 (0.40)	0 - 4
Pandemic Blaming Attributions	3.45 (1.07)	3.50 (1.11)	1 - 5
Self Blaming Attributions	2.16 (1.20)	2.34 (1.01)	1 - 5
Partner Blaming Attributions	1.83 (1.00)	1.86 (0.98)	1 - 5

*Note.* Means for daily variables represent participants' daily mean across all days of a diary period.

both waves (W1:  $M=3.63$ ,  $SD=1.08$ ; W2:  $M=3.67$ ,  $SD=1.01$ ) than they were of the self (W1:  $M=2.12$ ,  $SD=1.17$ ; W2:  $M=2.32$ ,  $SD=1.03$ ) or their partner (W1:  $M=1.82$ ,  $SD=1.01$ ; W2:  $M=1.98$ ,  $SD=1.06$ ; W1:  $F(2,461)=162.16$ ,  $p<.001$ ; W2:  $F(2,314)=109.86$ ,  $p<.001$ ). Finally, dyadic multilevel models examining within-person change revealed that participants' reports of their own negative behaviors significantly decreased ( $b=0.08$ ,  $SE=0.03$ ,  $t(131)=2.90$ ,  $p=.01$ ), while partner- and self-blaming attributions significantly increased from Wave 1 to Wave 2 (partner:  $b = -0.20$ ,  $SE= 0.10$ ,  $t(131) = -2.12$ ,  $p=.04$ ; self:  $b= -0.22$ ,  $SE=0.11$ ,  $t(131)= -2.05$ ,  $p=.04$ ). Neither daily stress, daily satisfaction, nor pandemic blaming attributions showed evidence of change across waves (stress:  $b= 0.02$ ,  $SE=0.02$ ,  $t(131)= 0.70$ ,  $p=.49$ ; satisfaction:  $b=0.03$ ,  $SE=0.06$ ,  $t(131)=0.57$ ,  $p=.57$ ; pandemic blame:  $b= -0.03$ ,  $SE=0.10$ ,  $t(131)=-0.28$ ,  $p=.78$ ).

### The Buffering Effects of Pandemic Blaming Attributions Over Time

To first examine whether pandemic blaming attributions buffered stress spillover, we estimated the following equation:

$$\begin{aligned}
 DV_{ijkt} = & (W/NB_{ijkt}) * (b_{0wj} + b_{1wj}DiaryDay_{ijkt} + b_{2wj}StudyWave_{ijt} + b_{3wj}DailyStress_{ijkt} + \\
 & b_{4wj}AverageDailyStress_{ij} + b_{5wj}PandemicBlamingAttributions_{ijt} + \\
 & b_{6wj}DailyStress_{ijt}XPandemicBlamingAttributions_{ijt} + e_{ijkt}) + (M/NB_{ijkt}) * (b_{0mj} + \\
 & b_{1mj}DiaryDay_{ijkt} + b_{2mj}StudyWave_{ijk} + b_{3mj}DailyStress_{ijkt} + \\
 & b_{4mj}AverageDailyStress_{ij} + b_{5mj}PandemicBlamingAttributions_{ijt} + \\
 & b_{6mj}DailyStress_{ijt}XPandemicBlamingAttributions_{ijt} + e_{ijkt}) \quad (1)
 \end{aligned}$$

The dependent variable  $DV_{ijkt}$  represents either daily satisfaction or daily perceived negative behavior for individual  $i$  (when  $i = 1$  the outcome is for W/NB and when  $i = 2$  the outcome is for M/NB), in couple  $j$ , on day  $k$ , in wave  $t$ . When the outcome is for a woman/non-binary individual,  $W/NB_{ijk} = 1$  and  $M/NB_{ijk} = 0$ , and the first part of the model is selected, and all of the  $b$  coefficients have the subscript  $w$ ; when the outcome is for a man/non-binary individual,  $W/NB_{ijk} = 0$  and  $M/NB_{ijk} = 1$ , and the second part of the model is selected, all of the  $b$  coefficients have the subscript  $m$ .

In this model, individual's daily relationship outcome (i.e., satisfaction or own perceived negative behavior) is estimated as a function of their own daily stress, which was centered within-person. The model adjusted for diary day within each wave to account for temporal effects of participating in a daily diary design (e.g., Shrout et al., 2018), as well as for study wave. Average daily stress across the diary days was grand mean centered and included in the analysis in order to fully disentangle the within-person and between-person effects of stress on relationship well-being (Bolger et al., 2013; Curran & Bauer, 2011). Adjusting for average daily



stress allowed us to examine whether fluctuations in daily stress were associated with relational outcomes while accounting for the fact that some individuals generally experienced greater levels of daily stress than did others. Finally, the main effect of pandemic blaming attributions, which were grand mean centered, and the two-way interaction between attributions and daily stress were included in the model. Not noted in the equation, but included in the model, were the random effects for the intercept and daily stress for both partners.

Table 4 presents results for the model examining relationship satisfaction as the outcome. Pandemic blaming attributions significantly moderated the within-person association between daily stress and daily relationship satisfaction for women/non-binary individuals, but not for men/non-binary individuals. However, the coefficients for this interaction did not significantly differ by gender ( $F(1,243)=0.80, p=.37$ ). As shown in Figure 1, the overall pattern of results for women/non-binary individuals supported predictions. Whereas pandemic blaming attributions were not associated with relationship satisfaction on days of lower stress ( $-1SD$ ; see dotted line), on days of higher stress, individuals who were more blaming of the pandemic reported greater relationship satisfaction compared to individuals who were less blaming of the pandemic ( $+1SD$ ; see solid line). Thus, although women/non-binary individuals reported lower satisfaction on days of greater stress, this association was weaker among those who were more blaming of the pandemic ( $+1SD$ ; see right side of graph) compared to those who were less blaming of the pandemic ( $-1SD$ ; see left side of graph).

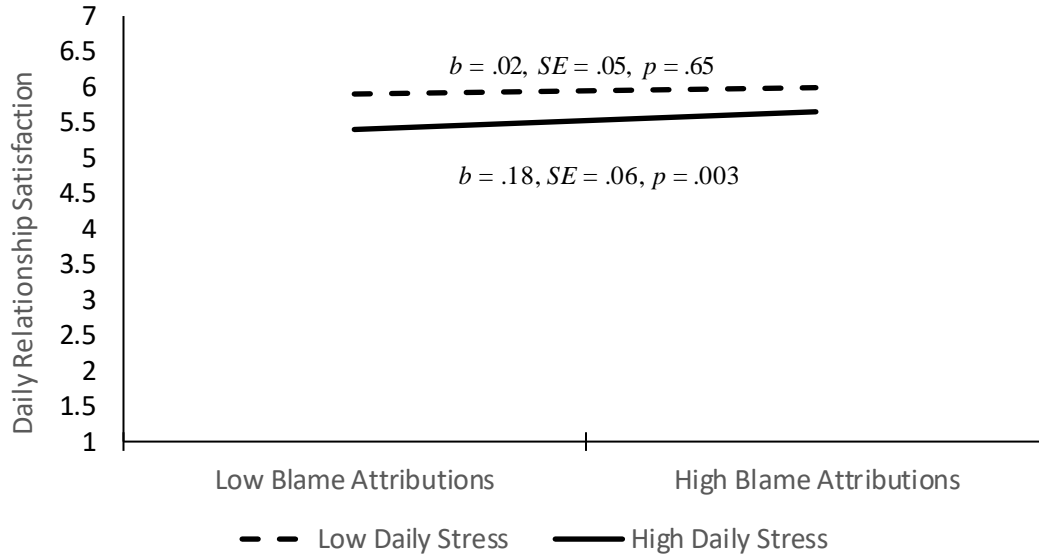
**Table 4***Buffering Effect of Pandemic Blaming Attributions on Stress Spillover: Relationship Satisfaction*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
<b>Women/NB</b>						
Intercept	5.72	0.11	50.46	<.001	5.50	5.94
Diary day	-0.02	0.01	-4.04	<.001	-0.04	0.00
Study Wave	-0.02	0.05	-0.43	0.670	-0.12	0.08
Daily Stress	-0.54	0.09	-6.18	<.001	-0.72	-0.36
Average Daily Stress	-0.41	0.22	-1.89	0.062	-0.85	0.03
Blame Pandemic	0.10	0.04	2.35	0.019	0.02	0.18
Daily Stress x Blame Pandemic	0.18	0.09	2.11	0.037	0.00	0.36
<b>Men/NB</b>						
Intercept	5.66	0.12	49.17	<.001	5.42	5.90
Diary day	-0.01	0.01	-1.00	0.316	-0.03	0.01
Study Wave	0.03	0.06	0.60	0.545	-0.09	0.15
Daily Stress	-0.28	0.07	-3.77	0.001	-0.42	-0.14
Average Daily Stress	-0.84	0.27	-3.09	0.003	-1.38	-0.30
Blame Pandemic	-0.02	0.04	-0.42	0.671	-0.10	0.06
Daily Stress x Blame Pandemic	0.08	0.07	1.15	0.252	-0.06	0.22

*Note.* Degrees of freedom were estimated using Satterthwaite approximations (Kenny et al., 2006) and ranged from 88-993; NB = non-binary; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

**Figure 1**

*Moderating Effect of Pandemic Blaming Attributions on Women/non-binary Individuals' Stress Spillover: Relationship Satisfaction*



*Note.* Although women/non-binary individuals reported lower relationship satisfaction on days of greater stress, this association was weaker among those who were more blaming of the pandemic ( $b = -0.35, SE = .11, p = .001$ ; see right side of graph) compared to those who were less blaming of the pandemic ( $b = -0.73, SE = .14, p < .001$ ; see left side of graph).

Turning to the results for participants' perceptions of their own negative relationship behaviors (see Table 5 and Figure 2), a significant stress-buffering effect of pandemic blaming attributions again emerged for women/non-binary individuals, but not for men/non-binary individuals (test for gender difference: ( $F(1,203)=0.35, p=.55$ ). Similar to the results for relationship satisfaction, pandemic blaming attributions were not associated with perceived negative behaviors on days of lower stress ( $-1SD$ ; see dotted line). However, on days of higher stress, individuals who were more blaming of the pandemic reported enacting fewer negative behaviors compared to individuals who were less blaming of the pandemic ( $+1SD$ ; see solid line). Again, although women/non-binary individuals reported enacting more negative behaviors toward their partner on days of greater stress, this association was weaker among those who were more blaming of the pandemic ( $+1SD$ ; see right side of graph) compared to those who were less blaming of the pandemic ( $-1SD$ ; see left side of graph). Overall, then, evidence for the stress-buffering potential of pandemic blaming attributions emerged for women/non-binary individuals.<sup>4</sup>

Next, to examine whether the strength of the moderating effect of pandemic blaming attributions changed across the study, we expanded the previously reported analytic model by interacting study wave with all predictors. Contrary to predictions, the three-way interaction between daily stress, pandemic blaming attributions, and study wave did not emerge as significant for either women/non-binary individuals or men/non-binary individuals on either daily satisfaction or perceived negative behaviors (see Tables 6 and 7). Thus, the protective effect of pandemic blaming attributions did not seem to dissipate over time.

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<sup>4</sup> Relationship status did not moderate any effects of interest (see supplemental materials).

**Table 5**

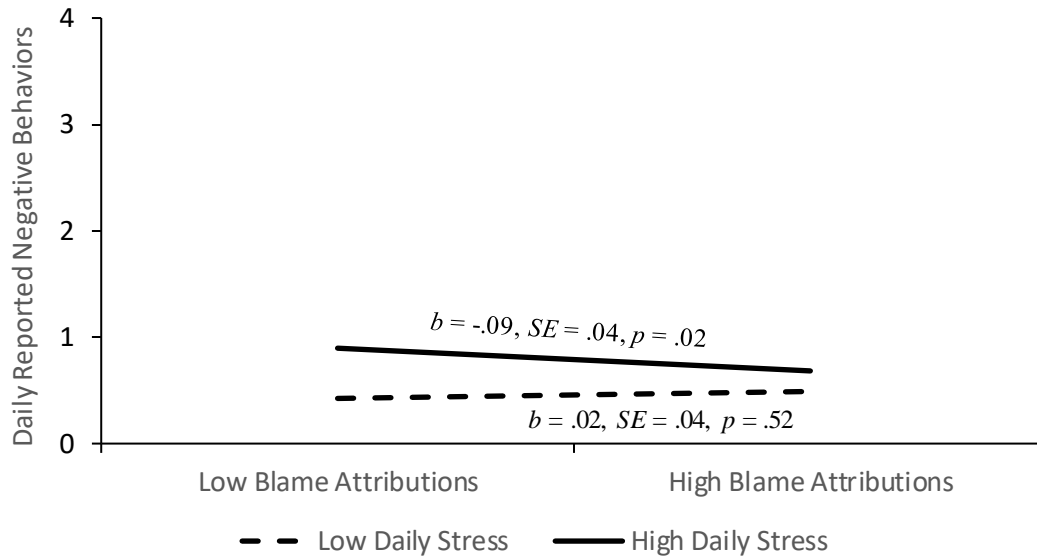
*Buffering Effect of Pandemic Blaming Attributions on Stress Spillover: Own Perceived Negative Behaviors*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
<b>Women/NB</b>						
Intercept	0.62	0.06	11.20	<.001	0.50	0.74
Diary day	-0.01	0.00	-3.01	0.003	-0.01	-0.01
Study Wave	-0.11	0.04	-2.67	0.008	-0.19	-0.03
Daily Stress	0.44	0.06	7.14	<.001	0.32	0.56
Average Daily Stress	0.22	0.09	2.43	0.017	0.04	0.40
Blame Pandemic	-0.03	0.03	-1.24	0.215	-0.09	0.03
Daily Stress x Blame Pandemic	-0.14	0.06	-2.29	0.025	-0.26	-0.02
<b>Men/NB</b>						
Intercept	0.52	0.06	8.48	<.001	0.40	0.64
Diary day	-0.01	0.00	-1.55	0.121	-0.01	-0.01
Study Wave	-0.08	0.04	-1.96	0.050	-0.16	0.00
Daily Stress	0.24	0.08	2.90	0.005	0.08	0.40
Average Daily Stress	0.64	0.13	4.79	<.001	0.38	0.90
Blame Pandemic	-0.02	0.03	-0.80	0.424	-0.08	0.04
Daily Stress x Blame Pandemic	-0.08	0.07	-1.13	0.262	-0.22	0.06

*Note.* Degrees of freedom were estimated using Satterthwaite approximations (Kenny et al., 2006) and ranged from 92-2169; NB = non-binary; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

**Figure 2**

*Moderating Effect of Pandemic Blaming Attributions on Women/non-binary Individuals' Stress Spillover: Own Perceived Negative Behaviors*



*Note.* Although women/non-binary individuals reported lower relationship satisfaction on days of greater stress, this association was weaker among those who were more blaming of the pandemic ( $b = 0.30, SE = .05, p < .001$ ; see right side of graph) compared to those who were less blaming of the pandemic ( $b = 0.59, SE = .10, p < .001$ ; see left side of graph).

**Table 6**

*Does the Buffering Effect of Pandemic Blaming Attributions Change Over Time? Relationship Satisfaction*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
<b>Women/NB</b>						
Intercept	5.75	0.12	48.48	<.001	5.51	5.99
Diary day	-0.03	0.01	-3.55	0.000	-0.05	-0.01
Study Wave	-0.09	0.10	-0.87	0.383	-0.29	0.11
Daily Stress	-0.59	0.11	-5.51	<.001	-0.81	-0.37
Average Daily Stress	-0.46	0.22	-2.07	0.041	-0.90	-0.02
Blame Pandemic	0.09	0.05	1.77	0.077	-0.01	0.19
Daily Stress x Blame Pandemic	0.14	0.11	1.33	0.184	-0.08	0.36
Diary Day x Study Wave	0.01	0.01	0.64	0.523	-0.01	0.03
Daily Stress x Study Wave	0.16	0.17	0.92	0.358	-0.18	0.50
Average Daily Stress x Study Wave	0.19	0.13	1.44	0.151	-0.07	0.45
Blame Pandemic x Study Wave	0.04	0.07	0.53	0.593	-0.10	0.18
Daily Stress x Blame Pandemic x Study Wave	0.10	0.17	0.57	0.570	-0.24	0.44
<b>Men/NB</b>						
Intercept	5.64	0.12	46.72	<.001	5.40	5.88
Diary day	0.00	0.01	-0.30	0.764	-0.02	0.02
Study Wave	0.10	0.10	0.91	0.364	-0.10	0.30
Daily Stress	-0.28	0.09	-3.08	0.003	-0.46	-0.10
Average Daily Stress	-0.64	0.28	-2.29	<.001	-1.20	-0.08
Blame Pandemic	-0.10	0.05	-1.91	0.056	-0.20	0.00
Daily Stress x Blame Pandemic	0.12	0.09	1.43	0.157	-0.06	0.30
Diary Day x Study Wave	-0.01	0.01	-0.81	0.417	-0.03	0.01
Daily Stress x Study Wave	-0.01	0.16	-0.06	0.949	-0.33	0.31
Average Daily Stress x Study Wave	-0.51	0.16	-3.17	0.002	-0.83	-0.19
Blame Pandemic x Study Wave	0.17	0.06	2.71	0.007	0.05	0.29
Daily Stress x Blame Pandemic x Study Wave	-0.14	0.15	-0.94	0.347	-0.44	0.16

*Note.* Degrees of freedom were estimated using Satterthwaite approximations (Kenny et al., 2006) and ranged from 79.9-1332; NB = non-binary; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

**Table 7**

*Does the Buffering Effect of Pandemic Blaming Attributions Change Over Time? Own Perceived Negative Behaviors*

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI	
					<i>LL</i>	<i>UL</i>
<b>Women/NB</b>						
Intercept	0.62	0.06	10.22	<.001	0.50	0.74
Diary day	-0.01	0.01	-2.61	0.009	-0.03	0.01
Study Wave	-0.11	0.08	-1.39	0.165	-0.27	0.05
Daily Stress	0.53	0.08	6.71	<.001	0.37	0.69
Average Daily Stress	0.22	0.09	2.38	0.019	0.04	0.40
Blame Pandemic	0.01	0.03	0.27	0.785	-0.05	0.07
Daily Stress x Blame Pandemic	-0.12	0.08	-1.55	0.123	-0.28	0.04
Diary Day x Study Wave	0.00	0.01	0.40	0.687	-0.02	0.02
Daily Stress x Study Wave	-0.27	0.13	-2.01	0.045	-0.53	-0.01
Average Daily Stress x Study Wave	-0.06	0.09	-0.62	0.538	-0.24	0.12
Blame Pandemic x Study Wave	-0.12	0.05	-2.45	0.014	-0.22	-0.02
Daily Stress x Blame Pandemic x Study Wave	-0.02	0.13	-0.13	0.899	-0.28	0.24
<b>Men/NB</b>						
Intercept	0.51	0.07	7.70	<.001	0.37	0.65
Diary day	-0.01	0.01	-0.89	0.373	-0.03	0.01
Study Wave	-0.06	0.08	-0.72	0.472	-0.22	0.10
Daily Stress	0.25	0.10	2.62	0.010	0.05	0.45
Average Daily Stress	0.60	0.14	4.29	<.001	0.32	0.88
Blame Pandemic	0.01	0.04	0.40	0.687	-0.07	0.09
Daily Stress x Blame Pandemic	-0.01	0.09	-0.09	0.929	-0.19	0.17
Diary Day x Study Wave	-0.01	0.01	-0.55	0.582	-0.03	0.01
Daily Stress x Study Wave	-0.01	0.14	-0.09	0.925	-0.29	0.27
Average Daily Stress x Study Wave	0.06	0.12	0.53	0.598	-0.18	0.30
Blame Pandemic x Study Wave	-0.09	0.05	-1.93	0.053	-0.19	0.01
Daily Stress x Blame Pandemic x Study Wave	-0.24	0.14	-1.70	0.089	-0.52	0.04

*Note.* Degrees of freedom were estimated using Satterthwaite approximations (Kenny et al., 2006) and ranged from 91.2-1220; NB = non-binary; CI = confidence interval; *LL* = lower limit; *UL* = upper limit.



### Discussion

Theoretical perspectives within the stress spillover literature suggest highly salient, large-scale, uncontrollable stressors may provide couples with an opportune scapegoat for their problems, which can protect relationship well-being from the harmful effects of that stress (Clavé et al., 2017; Diamond & Hicks, 2012). Yet, to our knowledge, the current study is only the second study to directly examine the beneficial effects of blaming the stressor. Preliminary analyses confirmed that, on average, individuals were more likely to blame the pandemic than they were to blame themselves or their partners for their problems. These findings, coupled with recent work demonstrating that individuals' partner-blaming attributions declined from pre- to post-pandemic (Williamson, 2020), suggest that the salience, scope, and uncontrollability of the unique stressful circumstances created by the COVID-19 pandemic may have encouraged partners to shift blame for their difficulties onto the stressor.

More importantly, this tendency to blame the stressor appeared to enhance stress resilience. Results indicated that although individuals reported engaging in more negative relationship behaviors and experienced lower relationship satisfaction on days of greater stress, this stress spillover was reduced among women/non-binary individuals who were more versus less blaming of the pandemic; a finding which supports the notion that stress awareness may aid couples' ability to successfully weather difficult times. Contrary to expectations, however, the benefits of stressor blaming attributions did not weaken as the pandemic persisted. Although some work suggests that couples' resiliency to large-scale stressors with lingering effects, such as natural disasters, can decline over time as couples' resources continue to be taxed and the original stressor becomes less salient (Williamson et al., 2021), in this case media coverage of the pandemic remained omnipresent throughout data collection and social distancing practices

continued to be encouraged. These factors likely reinforced the salience of the stressor, thereby allowing for the continued effectiveness of stressor blaming attributions.

Unexpectedly, pandemic blaming attributions did not buffer stress spillover among men/non-binary individuals. Given that direct tests for gender differences did not reach significance, the lack of a significant buffering effect for men/non-binary individuals should be interpreted with caution and may simply reflect the fact that fewer men participated in the study. Nonetheless, it is noteworthy that the only other study to directly examine the moderating role of stressor blaming attributions also found significant moderating effects for women only (Diamond & Hicks, 2012). Thus, further research should investigate the potential role of gender for these processes. The current findings do correspond to growing research identifying disparities in the psychological impact of the pandemic for men versus women. Evidence from around the globe suggests that women experienced greater emotional distress (e.g., González-Sanguino et al., 2020) and more dissatisfaction with their work-family balance (Craig & Churchill, 2020) due to the COVID-19 pandemic compared to men, which may enhance their vulnerability to experiencing stress spillover. Indeed, contrast analyses confirmed that women/non-binary individuals exhibited more stress spillover to buffer than did men/non-binary individuals ( $F(1,99)=7.60, p=.007$  for spillover to satisfaction;  $F(1,87)=5.14, p=.026$  for spillover to negative behavior), which also may account for why women/non-binary individuals more clearly benefited from their stressor blaming attributions.

Importantly, the current study was limited in that the sample was predominately white, well-educated, and reported experiencing relatively low daily stress on average. Although a daily diary methodology is well-suited for examining the disruptions to day-to-day life caused by the pandemic, this methodology is labor-intensive for participants. Consequently, couples struggling

with more serious stressors may have felt unable to commit the time needed to participate. As such, the current study represents a rather conservative test of the hypotheses. Given that stressor blaming attributions may not be protective if stress exceeds couples' coping capabilities (e.g., Tesser & Beach, 1998) additional research should explore these processes in more diverse samples facing a wider range of stressful experiences.

### **Conclusions**

Stressful circumstances have the power to destabilize couples' interactions and erode relationship quality (Neff & Karney, 2017). Yet, not all stressors are alike. In contrast to the everyday, recurring stressors couples often face, major stressful events are highly salient and thus can promote pro-active coping. The current study leveraged the unique conditions created by the COVID-19 pandemic to empirically examine a frequently discussed, yet rarely tested idea within the stress literature – whether blaming the stressor may mitigate spillover effects. In demonstrating the protective effects of blaming the stressor for one's problems, these findings not only provide insight into couple dynamics during an unprecedented time, but also advance our understanding of the factors that may promote couples' resiliency during periods of stress.

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