

Longitudinal Effects of Pandemic Stressors and Dyadic Coping on Relationship Satisfaction
During the COVID-19 Pandemic

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Abstract

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Emily Carrese-Chacra

This study examined changes in relationship satisfaction during the COVID-19 pandemic and the moderating roles of financial strain, perceived threat of COVID-19, and dyadic coping. The Systemic-Transactional Model of Dyadic Coping posits that relationship satisfaction varies as a function of the stressors partners face and their engagement in dyadic coping. About 188 partnered adults completed questionnaires at three time points during the initial confinement period of the COVID-19 pandemic and at a 20-month follow-up. Relationship satisfaction increased during the first confinement period and returned to its baseline level at the 20-month follow-up. Greater financial strain and perceived threat of COVID-19 were associated with poorer relationship satisfaction over time. Dyadic coping buffered the negative impact of financial strain on relationship satisfaction during the initial confinement period, but not 20 months later. Most individuals were resilient to the effect of pandemic stressors on relationship satisfaction. The buffering effect of dyadic coping was observed during the initial confinement period when access to support resources outside the family unit was curtailed. Intervention efforts to promote dyadic coping and financial well-being for couples may be especially helpful in the context of strict confinement measures.

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Contribution of Authors

Emily Carrese-Chacra: Ms. Carrese-Chacra contributed to the thesis by participating in study design, data collection and cleaning, co-writing the introduction, and writing the method, results, and discussion.

Kayla Hollett: Ms. Hollett contributed to the thesis by participating in data cleaning, co-writing the introduction, and reviewing and editing the manuscript.

Gizem Erdem: Dr. Erdem contributed to this thesis by providing input and recommendations for points of clarification and wording in the manuscript.

Sydney Miller: Dr. Miller contributed to this thesis by providing input and recommendations for points of clarification.

Jean-Philippe Gouin: This study is part of a larger project supervised by Dr. Gouin. Dr. Gouin designed this project, supervised the data collection and cleaning phases of this project, conducted the statistical analyses, and supervised the writing of the manuscript.

All authors reviewed the final manuscript and approved the contents.

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General Introduction

The coronavirus disease (COVID-19) pandemic led to strict stay-at-home orders and constraints to daily living, such as school closures and telecommuting. Drastic life changes, new stressors resulting from the pandemic (e.g., financial strain), and limited access to social support from extended family and friends may have had wide-ranging impacts on romantic relationships. Studies examining relationship satisfaction during the pandemic reveal variability in the way partnered individuals responded to the pandemic and its associated restrictions. For example, some longitudinal studies suggest that relationship satisfaction decreased during the COVID-19 pandemic compared to pre-pandemic levels (Ahuja & Khurana, 2021; Schmid et al., 2021; Vigl et al., 2021). Other studies reported that the perceived positive effects of the pandemic on romantic relationships and family life were greater than perceived negative effects during the first confinement period (Canzi et al., 2021; Holmberg et al., 2021). Such variability in relational outcomes indicates that interpersonal processes or contextual factors may have influenced how partnered individuals experienced and coped with pandemic-related stress.

The Systemic-Transactional Model of Dyadic Coping (STM; Bodenmann, 2005) proposes that relationship satisfaction is influenced by both the external stressors experienced by a couple as well as their extent of engagement in dyadic coping. Dyadic coping, defined as the process through which spouses help each other when one or both partners are facing stressful life events, has been found to be an important interpersonal process promoting adaptation to stress during the pandemic (e.g., Randall et al., 2021). Common dyadic coping involves conjoint efforts made by both partners to manage shared stressors and has been found to have a stronger association with relationship satisfaction compared to other dimensions of dyadic coping (Falconier et al., 2015). Given that the pandemic is a shared stressor amongst romantic partners, the present study aims to examine whether common dyadic coping moderates the association between pandemic stress and relational outcomes.

In addition to common dyadic coping, relational outcomes during the pandemic may have also been impacted by specific pandemic-related stressors faced by partnered individuals. The Vulnerability-Stress-Adaptation Model (VSA; Karney & Bradbury, 1995; Pietromonaco & Overall, 2021) identifies specific pandemic-related stressors that may influence romantic relationships. According to the VSA model, relationship satisfaction during the pandemic will vary as a function of couples' experiences of pandemic-related stressors as well as adaptive relational processes, such as common dyadic coping. Financial strain and perceived threat of COVID-19 are two pervasive pandemic-related stressors that have been associated with poor relational outcomes during the early phases of the COVID-19 pandemic (e.g., Balzarini et al., 2020; 2021, Li & Samp, 2021). These findings point to a need to further explore the impact of financial strain and perceived threat of COVID-19 on changes in relationship satisfaction over the course of the pandemic.

In accordance with the STM and the VSA model, financial strain, perceived threat of COVID-19, and common dyadic coping represent potential moderating variables that influenced trajectories of relationship satisfaction during the pandemic. The current study examined the short-term (confinement period, first wave of the pandemic) and long-term (20 months after the onset of the pandemic) impact of the pandemic on relationship satisfaction and explored the moderating effects of pandemic stressors and common dyadic coping on relationship satisfaction over time.

Introduction

The coronavirus disease (COVID-19) pandemic led to government-sanctioned confinement measures to curb the spread of the SARS-CoV-2 virus. Such measures contributed to drastic changes in the daily lives of adults, such as travel and quarantine restrictions, telecommuting, school closures, limited access to childcare, as well as associated external stressors including fear of contracting the virus for oneself and loved ones, and financial strain due to risk of or actual loss of income. In many countries, these external stressors were compounded by strict stay-at-home measures which limited access to social support from extended family and friends, leading partnered individuals to rely more heavily on their significant others for support under these stressful conditions. In this context, some individuals may have derived more support from their romantic relationship while others may have experienced increased relational tension and instability due to pandemic-related stress (Pietromonaco & Overall, 2021).

Few studies have reported on trajectories of relationship outcomes during the initial confinement phase of the pandemic. Cross-sectional data collected during this time suggests that, on average, partnered individuals did not report significant changes in relationship quality (Biddle et al., 2020), relational happiness and commitment (Walsh & Stephenson, 2021), or frustrations toward their partner (Calarco et al., 2020). Similarly, longitudinal studies conducted by Williamson (2020) and Gauvin (2022) found that on average, relationship satisfaction did not change over the course of the initial confinement period. However, significant inter-individual differences in relational outcomes were also noted (Williamson, 2020). For example, in a cross-sectional study, Biddle and colleagues (2020) surveyed 1,854 partnered individuals from a representative sample in Australia and found that 27.9% of respondents reported having a stronger relationship since the beginning of the pandemic while 17.5% reported having a more strained relationship during this time. Furthermore, while some longitudinal studies suggest that relationship satisfaction decreased during the COVID-19 pandemic compared to pre-pandemic levels (Ahuja & Khurana, 2021; Schmid et al., 2021; Vigl et al., 2021), other studies reported that the perceived positive effects of the pandemic on romantic relationships and family life were substantially higher than perceived negative effects during the first confinement period (Canzi et al., 2021; Holmberg et al., 2021). In summary, studies to date suggest that, while some relationships were maintained or strengthened during initial confinement periods, others deteriorated in quality. This variability in relational outcomes indicates that interpersonal processes or contextual factors may have influenced how partnered individuals experienced and coped with pandemic-related stress.

Bodenmann's Systemic-Transactional Model (STM; Bodenmann, 2005) proposes that dyadic coping, the process through which spouses help each other when one or both partners are facing stressful life events, is a key interpersonal process promoting adaptation to stress. Dyadic coping can involve strategies employed by one partner to support the other (delegated or supportive dyadic coping) or conjoint efforts by both partners to cope with shared stressors (common dyadic coping). The STM is based on the notion of interdependence, or the mutual influence that partners have on one another. Due to this mutual influence, the stress level of one partner can 'spill over' into the relationship and influence the stress level of the other (Randall & Bodenmann, 2009). Likewise, coping strategies employed by one partner as well as conjoint or dyadic coping efforts can influence the ability of both partners to cope with stress.

Bodenmann's STM proposes that relationship satisfaction is influenced by both the external stressors experienced by a couple as well as their extent of engagement in dyadic

coping. Bodenmann argues that dyadic coping not only helps partners manage external stressors but that it also plays an important role in enhancing relationship satisfaction. Notably, common dyadic coping involving conjoint efforts made by both partners to manage shared stressors, such as joint problem-solving, information seeking, or emotion-focused coping, has been found to have a stronger association with relationship satisfaction compared to other dimensions of dyadic coping in which only one partner leads the stress management strategy (Falconier et al., 2015). Given that the pandemic is a shared stressor amongst romantic partners, common dyadic coping may moderate the association between pandemic stress and relational outcomes, such that greater engagement in common dyadic coping would buffer the impact of pandemic-related stress on relational outcomes.

Few studies have examined the moderating role of dyadic coping on relational outcomes during the COVID-19 pandemic. In one cross-sectional study, Randall and colleagues (2021) found that individuals' perceptions of their partner's engagement in dyadic coping buffered the negative association between psychological distress and relationship quality during the pandemic. In another cross-sectional study, Donato and colleagues' (2021) found that partners who reported feeling dissatisfied in their relationship exhibited less stress communication, less adaptive dyadic coping responses, and lower psychological well-being compared to partners who reported greater satisfaction with their relationship. In a longitudinal study, Williamson (2020) found that individuals who used more adaptive coping behaviors related to common dyadic coping (e.g., working together as a team, splitting household responsibilities) were more satisfied with their relationship over time compared to those engaging less often in these behaviors.

In addition to common dyadic coping, relational outcomes during the pandemic may have also been impacted by specific pandemic-related stressors faced by partnered individuals. Recently, Pietromonaco and Overall (2021) adapted the Vulnerability-Stress-Adaptation Model (VSA; Karney & Bradbury, 1995) to identify specific pandemic-related stressors that may influence romantic relationships. According to the VSA model, relationship satisfaction during the pandemic will vary as a function of couples' experiences of pandemic-related stressors as well as adaptive relational processes, such as common dyadic coping.

One pervasive pandemic-induced stressor that impacted partnered individuals during initial confinement periods was financial strain. *Financial strain* refers to how people perceive the adequacy of their financial resources and the extent to which they worry about their current and future financial situation (also referred to as economic strain; Voydanoff & Donnelly, 1988). During the COVID-19 pandemic, many non-essential businesses were mandated to close which led to layoffs, reduced working hours, and reduced salaries. While not everyone experienced reduced income, many individuals were uncertain of their future income (Altig et al., 2020). Consistent with the principle of interdependence in the STM, financial strain has been conceptualized as a dyadic process where each partner's level of financial worry influences the other (Falconier & Epstein, 2010). Two longitudinal studies found that adults who reported greater financial strain during the initial confinement period had lower relationship satisfaction and decreased sexual desire for their partners over time (Balzarini et al., 2020; 2021). In addition, in a sample of same-sex partners, financial strain was associated with increased frustrations with one's partner and greater intentions to end one's relationship among same-sex couples (Li & Samp, 2021). These findings suggest that individuals who experience greater financial strain during confinement periods also had poorer relationship outcomes.

Another factor that may have influenced experiences of stress during the initial confinement phase of the pandemic is the extent to which individuals perceived the COVID-19

to pose a significant health threat to themselves, their close others, and their community. One study found that perceived health risk associated with COVID-19 accounted for 20.7% of the variance in increasing psychological distress from the beginning of March until the beginning of April 2020 (Robinson & Daly, 2020). Greater perceived COVID-19 threat has also been linked to less relationship satisfaction and greater intentions to terminate one's relationship (Li & Samp, 2021; Reizer et al., 2020). These findings point to a need to further explore the impact of perceived threat of COVID-19 on changes in relationship satisfaction over the course of the pandemic.

The STM posits that relationship satisfaction varies as a function of the external stressors experienced by the couple as well as their engagement in adaptive relational processes, such as common dyadic coping. Accordingly, financial strain, perceived threat of COVID-19, and common dyadic coping represent potential moderating variables that influenced trajectories of relationship satisfaction during the pandemic. A few longitudinal studies have examined the impact of relational processes on partners' responses to pandemic-related stress. For example, Balzarini and colleagues (2020) suggested that perceived partner responsiveness—the extent to which people believe their partner understands, validates, and cares for them—played an important moderating role in the association between pandemic stress and relationship satisfaction. In that study, financial strain predicted lower relationship satisfaction and greater relational conflict over three months, but only among individuals who perceived their partners to be low in responsiveness. While this finding demonstrates a link between adaptive relational processes and relationship satisfaction, longitudinal research is required to understand the role of common dyadic coping in fostering positive relationship outcomes during protracted stressors. Notably, most studies have focused on the early phases where strict confinement measures were implemented in many countries. How relational outcomes changed as individuals cycles through different waves of the pandemic, emerging viral variants, and changing sanitary measures is unknown.

The current study was designed to examine the effects of pandemic-related stressors and common dyadic coping on relationship satisfaction during the initial COVID-19 confinement period, a time when most individuals spent more time with their romantic partners and had little opportunities to interact with and access support from friends and extended family. Additionally, a longer-term follow-up assessment was conducted approximately 20 months after the onset of the pandemic to explore how these effects changed as individuals cycled through 3 waves of the pandemic and were living with less stringent, albeit still present physical distancing directives.

The current study examined the short-term (confinement period, first wave of the pandemic) and long-term (20 months after the onset of the pandemic) impact of the pandemic on relationship satisfaction and explored factors associated with those trajectories. Specifically, the first aim of this study was to examine the trajectory of relationship satisfaction across three time points during the first wave of the COVID-19 pandemic. A second aim was to examine the effects of financial strain, perceived threat of COVID-19, and common dyadic coping on relationship satisfaction trajectories over time. A third aim was to examine whether common dyadic coping would moderate the impacts of financial strain and perceived threat of COVID-19 on relationship satisfaction over time. A final aim of the present study was to explore long-term changes in relationship satisfaction as a function of financial strain, perceived threat of COVID-19, and common dyadic coping approximately 20 months after the onset of the COVID-19 pandemic. Based on prior work, we expected significant variability in the patterns of change in relationship satisfaction, with greater financial strain and perceived COVID-19 related threat

being associated with poorer relationship satisfaction over time. In line with Bodenmann's STM, it was expected that common dyadic coping would attenuate the negative impacts of financial strain and perceived threat of COVID-19 on change in relationship satisfaction over time.

Method

Participants and Procedure

The sample included 188 heterosexual adults (80.3% female) living in Quebec, Canada who reported being in a committed romantic relationship and provided information on their current financial situation. Participants were recruited from two existing participant pools of parents who had agreed to be contacted for future studies: (a) mothers of adolescents ($n = 93$) and (b) parents of preschool-aged children ($n = 95$).

Participants were sent an email invitation to participate in the study which contained a link to an informed consent form and an online questionnaire. Once participants gave consent, they completed an online survey in their preferred language (French or English) at four time points. The first three time points spanned the initial confinement period in Quebec, Canada. Time 1 occurred one week after the beginning of the confinement period (March 22nd, 2020), Time 2 occurred approximately one month into the confinement period (April 24th, 2020), and Time 3 occurred at the end of the first confinement period (June 28th, 2020). Time 4 occurred approximately one year following the end of the first confinement (July to November 2021). At each time point, follow-up reminder emails were sent to participants who had not completed the survey within two weeks of initial contact. The Concordia University Ethics Review Board approved the study. In compensation for their time, participants received CAN\$ 20 at each time point.

Of those who completed the survey at Time 1, 92% ($n = 173$) of participants provided follow-up data, with 73.9% ($n = 139$) of participants completing the questionnaire at Time 2, 70.7% ($n = 133$) completing the questionnaire at Time 3, and 80.3% ($n = 151$) completing the questionnaire at Time 4. Participants who did not provide follow-up data (i.e., only completed Time 1) did not differ on gender ($p = .17$), study of origin ($p = .19$), and relationship satisfaction at Time 1 ($p = .13$), compared to participants who completed at least one follow-up assessment. However, Caucasian ($p = .04$) and older participants ($p = .02$) were more likely to report follow-up data than participants with other ethnicities and younger participants. Finally, participants with a university degree were statistically more likely to provide follow-up data than participants without a university degree ($p = .04$).

Participants ranged from 27 to 65 years of age ($M = 45.22$, $SD = 7.59$) at Time 1. The distribution of ethnicity was 70% White, 11% Latin American, 7% Black, 4% Middle Eastern, 2% South Asian, 1.5% Asian, .5% Aboriginal, and 4% self-identified as Other. Approximately 75.2% of participants had a post-secondary education, with 52.5% of participants having a university degree. Most of the sample reported currently living with their romantic partner (88.6%) with an average length of time cohabiting of 15.3 years (range: < 1 year to 40 years).

Most participants (94.1%) had at least one child living with them. About 50.9% reported that their youngest child is between 0 and 12 years old, 16.1% have an adolescent aged between 13 to 17 years old, and 32.9% have a daughter or son of 18 years or older. Of participants who had children living with them, 80.9% had at least one child who had to stay home due to daycare or school closures caused by pandemic restrictions. In terms of changes to work status and

income due to the pandemic, 39.9% reported having to work from home, 29.6% lost their job, 29% experienced a reduction in salary, and 38% received financial assistance from the government during the pandemic (e.g., Canada Emergency Response Benefit). Moreover, 28.7% worked as an essential worker (i.e., that they continued working in person during the confinement period). The mean income was \$CAN 88,200 ($SD = 43,008.82$).

Measures

Relationship Satisfaction. The 7-item Dyadic Adjustment Scale (DAS-7; Hunsley et al., 2001) was used to assess relationship satisfaction at all four time points. This scale consists of three items to assess consensus (i.e., the extent to which respondents agree with their romantic partners on important relational matters) with a response range from *always disagree* (0) to *always agree* (5). Three items assess cohesion (i.e., the extent to which romantic partners share common interests and activities together) with a response range from *never* (0) to *more often* (5). One item assesses overall satisfaction with the relationship by asking respondents to rate the extent of happiness with their relationship with a response range *extremely unhappy* (0) to *perfect* (6). Higher total scores reflect greater relationship satisfaction (total score range: 0 to 36). The internal consistency of the DAS-7 in the current sample was good at all time points ($\alpha = .83-.89$). Previous studies provide evidence for acceptable internal consistency as well as good concurrent, criterion-related, and content validity of the DAS-7 (e.g., Hunsley et al., 2001).

Dyadic Coping. The 5-item common dyadic coping subscale of the Dyadic Coping Inventory (DCI; Bodenmann, 2008) was used to assess common dyadic coping at all four time points. The subscale assesses the frequency at which couples engage in various coping behaviors together, including emotion-focused tactics (e.g., “We help each other relax with such things like massage, taking a bath together, or listening to music together”) and problem-focused strategies tactics (e.g., “We help one another to put the problem in perspective and see it in a new light”). Items are rated on a 5-point scale ranging from *very rarely* (1) to *very often* (5), with higher scores indicating greater extent of dyadic coping (total score range: 5 to 25). The internal consistency of the common dyadic coping subscale in the current sample was good across all time points ($\alpha = .85-.88$). Previous research has found evidence for fair construct, concurrent, and discriminant validity of the common dyadic coping subscale of the DCI, with internal consistency estimates ranging from .70-.75 (Levesque et al. 2014; Randall et al., 2016). Given that the common dyadic coping subscale of the DCI were stable across time in the present sample, $\beta(SE) = -.06 (.12)$, $t = -.50$, $p = .62$, the average score across time points was used in the analyses.

Financial Strain. Consistent with Voydanoff and Donnelly’s (1988) conceptualization of financial strain, six items were used to assess financial strain at Time 1. Three items addressed perceived lack of financial resources including food, housing, heating, and other basic life supplies in the past week. These items were rated on a 5-point Likert scale ranging from *not at all* (0) to *extremely* (4). A fourth item assessed overall financial strain (i.e., the extent to which respondents felt that it was difficult to pay for necessities in the past week) and was rated on a 5-point Likert scale ranging from *not hard* (0) to *very hard* (4). Another item addressed the extent to which respondents worried about their finances in the past week and was rated on a 4-point Likert scale ranging from *not at all* (0) to *a lot* (3). A final item asked participants to select the statement that best describes the food eaten in their household in the past week from a list of four options (e.g., “you and other household members always had enough of the kinds of foods you wanted”). All six items were summed into a total score for the current study with higher scores

reflecting greater financial strain (total score range: 0 to 20). The internal consistency for the six items was adequate ($\alpha = .77$).

Perceived Threat of COVID-19. Perceived threat of COVID-19 was assessed at Time 1 with a 5-item scale that tapped on the perceived susceptibility and severity of COVID-19 for oneself and close others based on the health belief model (Gouin et al., 2021). Items were rated on a 5-point Likert scale ranging from *not at all* (1) to *extremely* (5), where higher scores reflect beliefs that COVID-19 posed a significant health threat to themselves and their community (total score range: 5 to 25). The internal consistency of the items in the current study was adequate ($\alpha = .71$).

Covariates. Depressive symptoms were assessed using the Center for Epidemiological Study-Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item measure assessing the frequency of various depressive symptoms in the past week (e.g., loneliness, poor appetite, sleep disturbances). Items are rated on a 4-point scale ranging from *rarely or none of the time* (0) to *most or all of the time* (3), with higher scores indicating greater depressive symptoms (total score range: 0 to 60). The CES-D has been found to have good internal consistency in a non-clinical sample ($\alpha = .85$; Radloff, 1977). The internal consistency of the CES-D in the current sample was acceptable ($\alpha = .73$).

Other covariates include variables relevant to the impact of COVID-19 on daily living, such as work location (i.e., whether the individual was working from home or outside the home), children staying at home due to school and daycare closures, age, and ethnicity, education, study of origin (i.e., mothers of adolescents or parents of preschool children) and cohabiting status. These variables were each assessed at Time 1 with a single homemade item.

Statistical Analyses

Hierarchical linear modeling (HLM) was used to estimate trajectories of change in relationship satisfaction over four time points (Level 1) as a function of financial strain, perceived threat of COVID-19, and common dyadic coping (Level 2). HLM accounts for the statistical non-independence of the data as well as the autoregressive correlations observed in repeated within-person analyses (Singer, 1998). Two sets of statistical analyses were conducted using SAS PROC MIXED, Version 9.4, Cary, NC with maximum likelihood estimation. The first set of analyses aimed to explore the effects of financial strain, perceived threat of COVID-19, and common dyadic coping on relationship satisfaction during the four months spanning the initial, strict confinement period (T1 – T3; short-term effects). The second set of analyses aimed to explore the longer-term changes in relationship satisfaction when including a 20-month follow-up assessment (T1 – T4). For each set of analyses, we estimated five multilevel models. The growth model was centered at Time 1. Model 1 (unconditional growth model) examined the average change in relationship satisfaction (DAS-7 scores) over time (fixed effect) as well as inter-individual variability in the trajectory of DAS-7 scores over time (random effect). Model 2 examined the main effects of financial strain, perceived threat of COVID-19, and common dyadic coping on DAS-7 scores at Time 1 (fixed effect). To explore whether financial strain, perceived threat of COVID-19, and common dyadic coping moderated change in DAS-7 scores over time, Model 3 examined two-way interactions between time and each Level 2 predictor on the average trajectory of DAS-7 scores over time (fixed effect). Model 4 estimated three-way interactions among two Level 2 predictors and time (fixed effect). Simple slope analyses were conducted following a statistically significant interaction by constructing slopes of change over time in DAS-7 scores at two levels of the moderators (1 standard deviation above and below the

mean). Lastly, Model 5 examined the main effects and two-way interactions of interest after adjusting for potentially confounding variables including gender (0 = male; 1 = female), ethnicity (0 = White, 1 = Other), age, study of origin (0 = parents of preschool aged children; 1 = mothers of adolescents), work location (0 = working from home, 1 = working outside the home), children staying at home due to school and daycare closures (0 = no; 1 = yes), cohabiting status (0 = no; 1 = yes), and depressive symptoms. Proportional reduction in variance of the random effect of time (pseudo R^2 statistic) was calculated by subtracting the residual variance of the more complex models from the residual variance in the unconditional growth model and dividing this value by the residual variance in the unconditional growth model, as a measure of the magnitude of the effect size (Anderson, 2012).

Results

Initial Confinement Period (Time 1 – Time 3)

Table 1 describes the means and standard deviations of the main variables at each time point. Figure 1 depicts the trajectory of relationship satisfaction (DAS-7 scores) over four time points during the COVID-19 pandemic. Table 2 describes the results of five sequential models used to predict change in DAS-7 scores over the course of the initial confinement period (T1 to T3). Model 1 (unconditional growth model) revealed a significant fixed effect of time on DAS-7 scores, indicating that participants' average level of relationship satisfaction increased across the three time points. In addition to the linear effect, a significant curvilinear effect of time on DAS-7 scores ($b = .55$, $SE = .27$, $p = .04$) was found, indicating no change in relationship satisfaction during the first month of the confinement period followed by an increase toward the end of the confinement period. Furthermore, Model 1 revealed a marginally significant random effect of the slope, indicating that there was variability in the rates of change in relationship satisfaction over time.

Model 2 examined the main effects of financial strain, perceived threat of COVID-19, and common dyadic coping on DAS-7 scores at the beginning of the confinement. The results revealed significant main effects of financial strain and common dyadic coping on DAS-7 scores at Time 1, but not of perceived threat of COVID-19. Model 3 revealed statistically significant fixed effects for time \times perceived threat of COVID-19, time \times financial strain, and time \times common dyadic coping in predicting change in DAS-7 scores. That is, higher perceived threat of COVID-19 ($b = -.06$, $SE = .22$, $p = .78$) and financial strain ($b = .04$, $SE = .23$, $p = .86$) were not associated with change in DAS-7 scores over time, but lower perceived threat of COVID-19 ($b = .88$, $SE = .24$, $p < .001$) and lower financial strain ($b = .78$, $SE = .24$, $p < .01$) were associated with a larger increase in DAS-7 scores over time. Greater common dyadic coping was also associated with a larger increase in DAS-7 scores over time on average ($b = .74$, $SE = .23$, $p < .01$), compared to those with lower dyadic coping ($b = .08$, $SE = .24$, $p = .75$). Model 3 accounted for a total of 40.6% of the random slope variance in DAS-7 scores compared to Model 1.

There was a significant time \times common dyadic coping \times financial strain interaction (Model 4), whereby high dyadic coping buffered the effects of financial strain on relationship satisfaction over time. Specifically, greater common dyadic coping was associated with an increase in DAS-7 scores over time among participants reporting low financial strain ($b = .97$, $SE = .28$, $p < .001$). In contrast, in the context of low common dyadic coping, participants with higher ($b = -.13$, $SE = .29$, $p = .65$) and lower ($b = .51$, $SE = .31$, $p = .09$) financial strain saw no

Table 1

Financial Strain, Perceived Threat of COVID-19, Dyadic Coping, and Relationship Satisfaction: Correlations and Descriptive Statistics (N = 188)

Variables	1	2	3	4	5	6	7
1. Financial strain	–						
2. Perceived threat of COVID-19	0.13	–					
3. Dyadic coping (mean T1-T4)	-0.06	-0.11	–				
4. Relationship Satisfaction (Time 1)	-0.16*	-0.16*	0.73***	–			
5. Relationship Satisfaction (Time 2)	-0.19*	-0.11	0.68***	0.78***	–		
6. Relationship Satisfaction (Time 3)	-0.24**	0.02	0.74***	0.77***	0.83***	–	
7. Relationship Satisfaction (Time 4)	-0.23**	-0.08	0.63***	0.74***	0.77***	0.77***	–
<i>M</i>	6.22	15.97	16.33	22.65	22.42	23.35	22.05
<i>SD</i>	4.09	3.05	3.76	5.40	5.66	6.39	6.60

* $p < .05$. ** $p < .01$. *** $p < .001$

Figure 1

Trajectory of relationship satisfaction across four time points during the COVID-19 pandemic in Quebec, Canada.

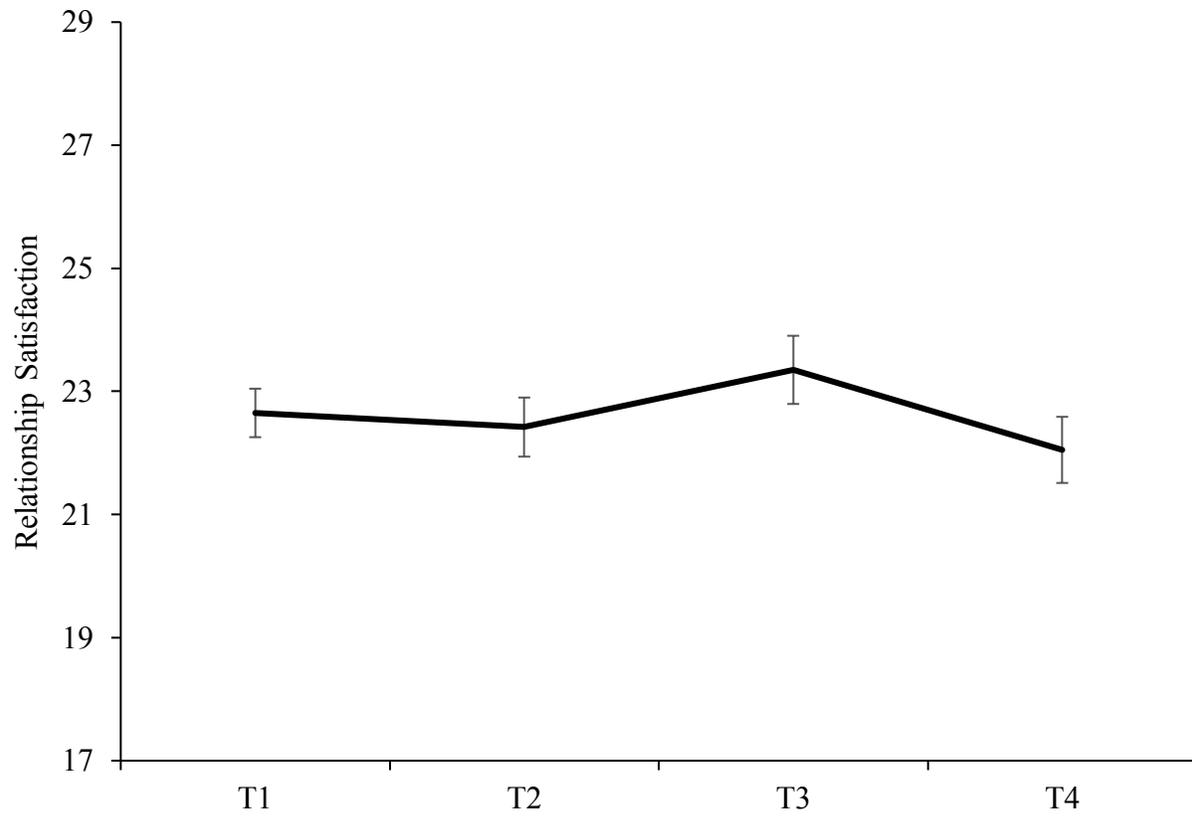


Table 2

Summary of Hierarchical Linear Regression Analyses for Variables Predicting Change in Relationship Satisfaction During the Initial Confinement Period

	Model 1	Model 2	Model 3	Model 4	Model 5
Fixed Effects	<i>B (SE_B)</i>				
Intercepts	22.18 (0.45)***	21.93 (0.38)***	21.86 (0.38)***	21.84 (-0.38)***	7.10 (5.13)
Time	0.36 (0.17)*	0.37 (0.17)*	0.41 (0.16)*	0.43 (0.09)**	-0.95 (2.30)
Perceived Threat (PT)		0.39 (0.42)	1.69 (0.62)**	1.65 (0.62)**	0.67 (2.70)
Financial Strain (FS)		-0.20 (0.06)**	-0.05 (0.09)	-0.04 (0.09)	0.42 (0.41)
Dyadic Coping (DC)		0.99 (0.07)***	0.85 (0.10)***	0.86 (0.10)***	0.83 (0.11)***
PT × Time			-0.77 (0.27)**	-0.74 (0.27)**	0.07 (1.18)
FS × Time			-0.09 (0.04)*	-0.44 (0.16)**	-0.45 (0.18)*
DC × Time			0.09 (0.04)*	0.07 (0.04)	0.09 (0.05)
PT × DC				0.03 (0.15)	0.02 (0.17)
FS × DC				-0.02 (0.02)	-0.02 (0.02)
PT × DC × Time				-0.03 (0.07)	-0.04 (0.07)
FS × DC × Time				0.02 (0.01)*	0.02 (0.01)*
Gender					-0.08 (1.23)
Age					0.07 (0.08)
Education					0.95 (0.83)
Ethnicity					0.79 (0.96)
Study of Origin					-0.36 (1.39)
Work Location					-0.02 (0.54)
Children at Home					0.47 (1.16)
Cohabitation Status					-0.67 (1.39)
Depressive symptoms					-0.13 (0.04)**
Gender × Time					-0.45 (0.52)
Age × Time					0.01 (0.04)

Education × Time					-0.18 (0.35)
Ethnicity × Time					-0.78 (0.42)
Study of Origin × Time					-0.35 (0.62)
Work Location × Time					0.08 (0.23)
Children at Home × Time					0.04 (0.48)
Cohabitation Status × Time					-0.02 (0.66)
Depressive symptoms × Time					0.02 (0.02)
<hr/>					
Random Effects					
Intercept	20.95 (4.37)***	9.43 (3.39)**	8.52 (3.27)**	8.41 (3.28)**	8.01 (3.41)**
Slope	0.13 (1.44)	-0.96 (1.33)	-0.41 (1.28)	-0.22 (1.27)	-0.27 (1.32)
Residual	0.95 (0.66)	0.91 (0.65)	0.56 (0.62)	0.42 (0.25)	0.46 (0.64)

* = $p < .05$. ** = $p < .01$. *** = $p < .001$.

change in relationship satisfaction over time. The time \times common dyadic coping \times perceived threat of COVID-19 interaction was not significant. Figure 2 depicts the results of a simple slopes analysis decomposing this interaction. Model 4 accounted for a total of 15.21% of the random slope variance in DAS-7 scores compared to Model 3.

In Model 5, these analyses were repeated after including a range of potentially confounding covariates. Results indicated that participants with more depressive symptoms reported lower relationship satisfaction at Time 1, but not over time. Ethnicity, education, gender, age, cohabitation status, study of origin, work location, and children living at home were not statistically significant predictors of DAS-7 scores at Time 1 and over time. The time \times common dyadic coping \times financial strain interaction remained significant in this fully adjusted model. Model 5 accounted for a total of 51.57% of the random slope variance in DAS-7 scores compared to Model 1.

20-month follow-up assessment (Time 1 – Time 4)

When examining change in relationship satisfaction about 20 months after the onset of the COVID-19 pandemic, Model 1 (unconditional growth model) revealed a non-significant linear fixed effect of time on DAS-7 scores ($b = -.08$, $SE = .11$, $p = .50$), but a significant cubic effect of time on DAS-7 scores ($b = -.52$, $SE = .18$, $p < .01$), indicating that participants' average rating of relationship satisfaction returned to their early-pandemic baseline level at the last follow-up assessment. In addition, Model 1 revealed a significant random effect of the slope ($b = .48$, $SE = .27$, $p = .04$), indicating that there was significant variability in the rates of change in relationship satisfaction over this longer follow-up.

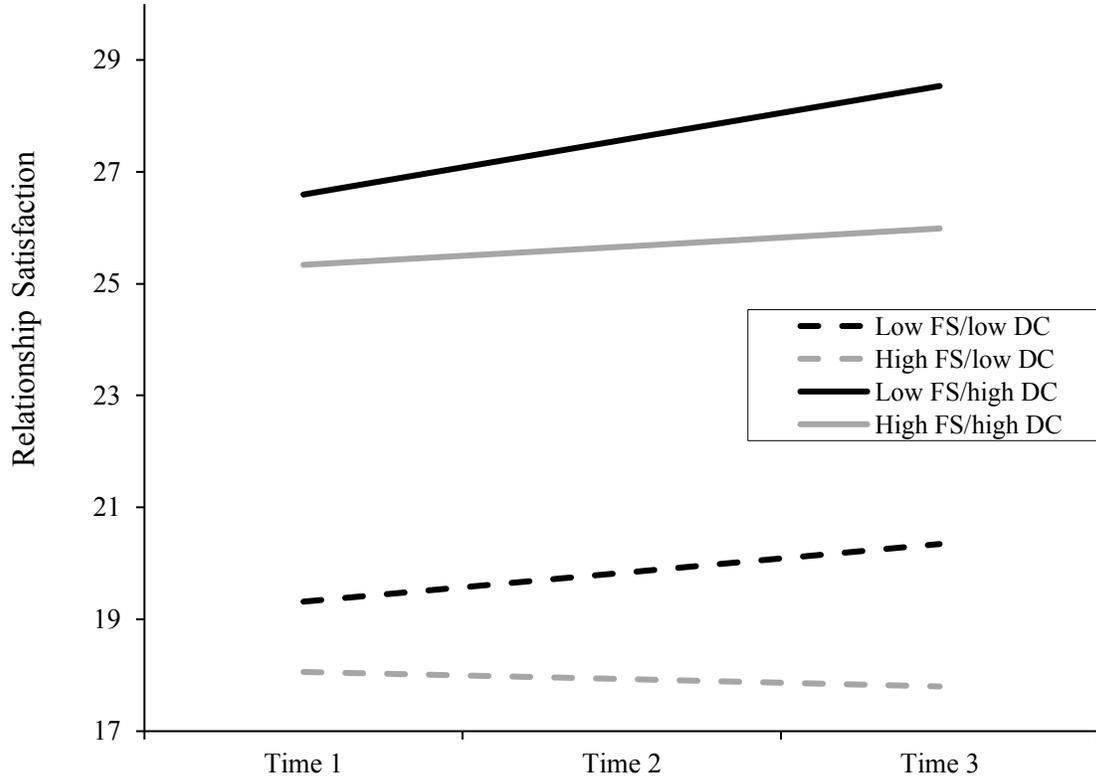
Across the 20-month follow-up, there were significant fixed effects for time \times perceived threat of COVID-19 ($b = -.37$, $SE = .19$, $p = .05$), time \times financial strain ($b = -.06$, $SE = .03$, $p = .02$), but not time \times common dyadic coping ($b = -.01$, $SE = .03$, $p = .80$) in predicting DAS-7 scores over time. That is, greater financial strain ($b = -.30$, $SE = .16$, $p = .05$) and perceived threat of COVID-19 ($b = -.26$, $SE = .15$, $p = .09$) were associated with a larger decrease in DAS-7 scores, compared to lower financial strain ($b = .23$, $SE = .16$, $p = .16$) and perceived threat of COVID-19 ($b = .19$, $SE = .17$, $p = .26$). In contrast to the findings during the first confinement period, there were no statistically significant three-way interactions of time \times common dyadic coping \times financial strain ($b = .01$, $SE = .01$, $p = .38$) and time \times common dyadic coping \times perceived threat of COVID-19 ($b = -.06$, $SE = .04$, $p = .18$) across the 20-month follow-up.

Discussion

The goal of the present study was to assess change in relationship satisfaction during the first confinement period as well as 20 months into the COVID-19 pandemic, and to examine the moderating effects of pandemic stressors and common dyadic coping on relationship satisfaction over time. During the first wave of the pandemic, relationship satisfaction decreased in the first month of the confinement period but increased above initial levels toward the end of the first confinement period. At the 20-month follow-up, relationship satisfaction returned to its early-pandemic baseline level. Financial strain and perceived threat of COVID-19 were negatively associated with relationship satisfaction over time both at short-term and long-term assessments. Common dyadic coping buffered the negative impact of financial strain on relationship satisfaction during the initial confinement period. However, this effect was not statistically significant at the 20-month follow-up. These findings could reflect patterns of resilience and habituation to pandemic-related stress among partnered individuals.

Figure 2

Relationship satisfaction as a function of low versus high financial strain and common dyadic coping across three time points during COVID-19 confinement in Quebec, CA



Note. FS stands for financial strain. DC stands for dyadic coping.

Short-Term Trajectory of Relationship Satisfaction (Initial Confinement Period)

In contrast to studies revealing no overall change or an average decrease in relationship satisfaction during the COVID-19 pandemic (e.g., Ahuja & Khurana, 2021; Gauvin et al., 2022) there was no change in relationship satisfaction during the first month of confinement followed by an increase towards the end of the first confinement period in the current sample. Such curvilinear change in relationship satisfaction highlights that the impact of the pandemic on relationship satisfaction changed rapidly during the first confinement period, potentially suggesting a habituation process to this new situation. Indeed, studies document that pandemic-related lifestyle changes were associated with higher relationship quality (Rodrigues & Lehmiller, 2021) including when length of time in quarantine or social distancing with cohabitants increased (Cooper et al., 2020). Similarly, a longitudinal study revealed that partnered individuals perceived more positive than negative impacts of the COVID-19 pandemic on their romantic relationship over time (Holmberg et al., 2021). Similar patterns of habituation have been observed in studies examining change in psychological distress during the COVID-19 confinement period. Fancourt and colleagues (2021) reported that after an early peak of distress, most people exhibited a reduction in anxiety and depressive symptoms between the second and fifth week of the strict confinement period.

The initial confinement period created a unique social context for romantic relationships. Strict confinement measures limited access to support from friends and relatives and provided opportunities for partners to spend more time together, hence creating enhanced interdependence. Partners also had to navigate a shared stressor together (Pietromonaco & Overall, 2021). Qualitative studies suggest that some romantic partners benefitted from confinement via engaging in enjoyable activities together, focusing on their relationship, and deepening their connection with their partner (Holmberg et al., 2021; Okabe-Miyamoto et al., 2021). Moreover, participants may have used a range of adaptive relational processes to effectively manage pandemic stress. For example, during the confinement period, individuals were more forgiving and less blaming of their partner's negative behaviors by attributing these behaviors more to the situation and less to personal characteristics (Williamson, 2020). Taken together, strict confinement measures appear to have allowed many partnered individuals to strengthen intimacy and connection with their romantic partner.

Long-Term Trajectory of Relationship Satisfaction (20-Month Follow-up)

A follow-up assessment approximately 20 months into the pandemic indicated that relationship satisfaction returned to its early pandemic baseline level. This finding is consistent with research on the effects of natural disasters on romantic relationships. For example, Williamson and colleagues (2021) found that after Hurricane Harvey, partnered individuals experienced a temporary increase in relationship satisfaction followed by a return to baseline. Possibly, the acute effects of the pandemic triggered an initial boost in relationship satisfaction. As partnered individuals adapted to a new normal, relationship satisfaction may have returned to its baseline levels. Alternatively, it may be the case that the context of enhanced interdependence during the first confinement period dissipated as partners relied less heavily on one another for support as pandemic restrictions were eased. Specifically, following the initial confinement period, public spaces reopened, indoor gatherings were permitted, and access to social support outside the romantic relationship (friends, colleagues, relatives) improved. Vaccination against the SARS-CoV-2 virus was well distributed in Canada by July 2021 (Time 4), which may have changed appraisals of threat related to COVID-19 and created a sense of safety for individuals to

gather in larger numbers. Therefore, changes in time spent together, improved access to other social support resources, and change in COVID-19 threat appraisals may explain the return to baseline observed in relationship satisfaction following the initial confinement period.

Effects of Pandemic Stressors on Relationship Satisfaction Over Time

Variability in changes in relationship satisfaction was observed across participants, suggesting that not all partnered individuals were impacted by the COVID-19 pandemic in the same way. The VSA model suggests that relationship satisfaction varies as a function of couples' experiences of pandemic-related stressors as well as their capacity to adapt to those stressors (Pietromonaco & Overall, 2021). Consistent with this model, the present study revealed that greater financial strain and perceived threat of COVID-19 were associated with a slower rate of increase in relationship satisfaction over the initial confinement period and an overall decrease in relationship satisfaction across the 20-month follow-up. These findings corroborate prior work demonstrating the negative impact of financial strain (e.g., Balzarini et al., 2020; 2021; Li & Samp, 2021) and fear of the SARS-COV-2 virus (Reizer et al., 2020; Li & Samp, 2021) on relationship outcomes.

Findings indicate that people's experience of the pandemic will vary as a function of individuals' objective financial and material resources (i.e., income, living conditions, ability to purchase necessities) as well as their appraisals of the adequacy of these resources. In a recent longitudinal study, Turliuc & Candel (2021) found that couples with lower socioeconomic status were prone to greater stress and lower levels of relationship satisfaction during the COVID-19 pandemic. As such, individuals who are already experiencing economic hardship may have been more affected by threats to financial stability posed by the pandemic, even if their romantic relationship is highly functioning. For example, partners sharing a small living space during the pandemic may have less privacy and time for themselves, which may, in turn, exacerbate tensions and conflicts between the partners. Such living circumstances combined with financial stress may further exhaust couples' resources, challenge supportive communication, and contribute to lower relationship satisfaction during the pandemic. For many individuals, the pandemic created substantial economic instability due to job loss. Indeed, almost 40% of participants received financial assistance from the federal government during the pandemic. It is notable that financial strain remained a significant predictor of change in relationship satisfaction despite rapid financial support from the government. One possibility for this is that participants still experienced uncertainty regarding their income source following the support period and may have nonetheless experienced a reduction in their usual income.

Effects of Common Dyadic Coping on Relationship Satisfaction Over Time

Greater self-reported engagement in common dyadic coping strategies was associated with a faster rate of increase in relationship satisfaction over time and buffered the negative impact of financial strain on relationship satisfaction during the initial confinement period. Taken together with cross-sectional data collected during the COVID-19 pandemic (e.g., Donato et al., 2021; Randall et al., 2021), dyadic coping appears to be an interpersonal process that may protect partnered individuals against the negative effects of stress during crises. The STM proposes that partners who engage in dyadic coping enhance trust, validation, and support in their relationships through adaptive stress communication, motivation towards engaging in dyadic coping, and enhanced self-regulatory resources (Bodenmann, 2005; Neff & Karney, 2017). In line with findings that common dyadic coping is most strongly predictive of

relationship satisfaction compared to other forms of dyadic coping (Falconier et al, 2015), the current results add that individuals who work together with their partners to cope with stress may be better equipped to weather crises that involve common stressors.

At the 20-month follow-up, common dyadic coping did not predict change in relationship satisfaction over time, suggesting that within the changing pandemic context, the effect of dyadic coping changed over time. According to the STM, greater dyadic coping resources are activated in the face of more severe stressors (Bodenmann, 2005). During the first confinement period, risks to financial stability and fear of the virus were heightened, suggesting that partners may have activated more dyadic coping resources during this time compared to the post-confinement period. As couples adapt to crises and stressors decrease in intensity, the need for dyadic coping may wane over time. Alternatively, dyadic coping may be particularly relevant in the context of heightened interdependence posed by strict confinement periods. According to the STM, given that one partner's satisfaction is highly dependent on the other partner's satisfaction, partners are generally motivated to help one another deal with stress (Bodenmann, 2005). Partners' motivation to engage in dyadic coping may have been enhanced during the confinement period as partners spent more time together and opportunities for stress spillover and conflicts increased. In contrast, as partners spent less time together and access to social support resources improved at the 20-month follow-up, partners may have relied less heavily on common dyadic coping strategies to cope with the ongoing pandemic. In fact, Bodenmann (2000, as cited in Bodenmann, 2005) revealed that as social support from friends and family increased, individuals relied less on their romantic partner for coping.

Common dyadic coping did not moderate the association between perceived threat of COVID-19 and relationship satisfaction over time. The fact that common dyadic coping moderated the impact of financial strain, but not perceived threat of COVID-19, may be related to differences in the nature of these two stressors. Whereas financial strain may impact both members of a couple in a similar way due to shared sources of income and pooled finances, partners may have different appraisals of the threats related to COVID-19. As such, perceived threat of COVID-19 could be conceptualized as an individual stressor rather than a shared or common stressor. Given that common dyadic coping involves coping strategies that are generally symmetrical or complementary within couples (Falconier & Kuhn, 2019), it may be more effective at mitigating the effects of shared stressors than individual stressors that do not impact both couple members equally.

Strengths, Limitations, and Future Directions

The current study has several strengths. Baseline data was collected during the week of the first confinement period, which allows for the examination of the early effects of confinements measures on romantic relationships. Also, the inclusion of repeated assessments during the first wave of the pandemic as well as a long-term follow-up provides a depiction of how relational outcomes changed as individuals cycles through different waves of the pandemic and changing sanitary measures.

The present study has some limitations that direct future research. First, most participants were White, middle-class, female, and heterosexual, representing a sampling bias which restricts the generalizability of the results. Second, average DAS-7 scores in the present sample were comparable to those of a previous community sample ($M = 25.8$; Hunsley et al., 2010), highlighting that the current findings may not be generalized to clinically distressed couples. Couples who had ongoing relational distress, high conflict, and hostility prior to the pandemic

may be less equipped to cope with pandemic-related external stressors and utilize dyadic coping strategies. Third, the data in the current study were drawn from one partner rather than dyads. Given the interdependent nature of relational variables in romantic partners, future research should consider data from both partners and dyadic analyses, such as the actor-partner interdependence model (APIM; Kenny et al., 2006). Fourth, the current study examined common dyadic coping as a sole indicator of stress coping. However, other relationship maintenance behaviors (e.g., responsiveness, conflict management; Ogolsky et al., 2017), as well as other dimensions of dyadic coping (e.g., delegated dyadic coping; Bodenmann, 2005), may have also buffered the effects of pandemic stressors on relationship satisfaction. More research is needed to examine the role of different types of maintenance behaviors above and beyond common dyadic coping strategies. Lastly, homemade items were used to assess financial strain and perceived threat of COVID-19, so future studies should utilize validated measures to assess these constructs.

Implications

Interventions that foster common dyadic coping may play an important role in supporting couples early on during crises. For example, Couple Coping Enhancement Training (CCET-DVD) is a DVD-based program that allows couples to improve their relationship in a remote and self-directed manner (Bodenmann et al., 2014). A central aim of CCET-DVD is to enhance couples' communication and couple-level coping with stress. The intervention has been associated with improvements in dyadic coping, relationship satisfaction, positive communication, and conflict resolution (Bodenmann et al., 2014). This intervention format may be especially suitable for the pandemic context.

In the present study, financial strain had a negative impact of relationship satisfaction during the pandemic despite the provision of financial assistance from the Canadian government. Consequently, interventions targeting both financial management and dyadic coping may be helpful supplements to governmental financial assistance for couples during periods of financial uncertainty. Falconier and colleagues (2015) created an interdisciplinary program, *TOGETHER*, for couples experiencing financial strain. In this program, partners learn how to improve communication, dyadic coping, and manage finances. Components of the program are informed by Bodenmann's (2005) STM. The program has been associated with reductions in financial strain and negative communication between partners as well as improvements in coping strategies and financial management skills.

Conclusion

The results of the current study suggest an overall pattern of habituation and resilience to pandemic stress with regards to relationship satisfaction. Financial strain and perceived threat of COVID-19 are two pervasive pandemic stressors that negatively impact relationship satisfaction in partnered individuals. However, common dyadic coping is an important protective factor against the negative effects of financial strain on relationship satisfaction during the initial confinement period of the COVID-19 pandemic. Interventions that foster dyadic coping may be especially relevant during the initial phases of prolonged crisis.

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