

# The role of stress mindset in support provision

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## Abstract

To better understand the antecedents of support provision within relationships, this study examined the potential role of a novel individual difference; spouses' stress mindset (i.e., beliefs about whether stress-is-enhancing or stress-is-debilitating). As individuals with a stress-is-enhancing mindset often underestimate other's stress, we hypothesized that those with a stress-is-enhancing mindset will generally provide less and worse support compared to individuals with a stress-is-debilitating mindset. The results revealed few significant associations and the associations that were significant were contrary to predictions. For example, wives with a stress-is-enhancing mindset provided more support, and husbands who perceived their partner as having a more stress-is-enhancing mindset provided better support. Further research is needed to replicate these results and determine whether stress mindset has interpersonal consequences.

## KEYWORDS

marital quality, relationship maintenance, stress, stress mindset, support provision

## 1 | INTRODUCTION

Perhaps one of the most important functions of marriage is to provide individuals with a source of support for overcoming challenges and attaining important goals (Feeney & Collins, 2015;

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Finkel, Hui, Carswell, & Larson, 2014). Indeed, individuals often cite their spouse as their primary source of social support (Revenson, 1994), and some research suggests that support received from other sources does not make up for lack of support from one's partner (Coyne & DeLongis, 1986). Not surprisingly, then, the quality of couples' support exchanges is a unique and important predictor of both personal and marital well-being. For instance, spouses' ability to effectively support one another is associated with a host of positive outcomes such as increased positive mood, better mental health, and lower mortality risk (Brown, Nesse, Vinokur, & Smith, 2003; Feeney & Collins, 2015; Inagaki & Eisenberger, 2012). Moreover, couples' support exchanges are a robust predictor of changes in marital satisfaction over time (Pasch & Bradbury, 1998), and relationship functioning has been shown to improve if couples support each other when confronted with severe and daily stressors (Coyne & Smith, 1994; Lichtman, Taylor, & Wood, 1988; Repetti, 1989). In this way, spouse' ability to provide support to one another in the face of everyday stressors seems to play a central role in marital development (Bradbury & Karney, 2004).

Given the importance of support exchanges for well-being, a sizable literature has explored how support processes operate within couples. Although research on the effectiveness of couples' support exchanges has primarily focused on clarifying the consequences of support for the recipient (Gleason & Iida, 2015), a growing body of research has turned toward illuminating the factors that may facilitate or hinder the likelihood of support provision. This focus is essential for better understanding support processes as support provision involves a complex sequence of steps, and thus can be quite difficult to skillfully enact (Rafaeli & Gleason, 2009). Specifically, to be an effective support provider, spouses must perceive that their partner is facing a problem, assess the situation to determine whether support is needed, and finally perform the appropriate support behaviors (Pearlin & McCall, 1990). Unfortunately, complications may arise at any step of this process. For instance, spouses may fail to offer desired support to their partner because they have inaccurately inferred their partner's coping resources and capabilities (Verhofstadt, Buysse, Ickes, Davis, & Devoldre, 2008). Furthermore, evidence suggests that for enacted support behaviors to be beneficial, the type of support provided must match the specific needs and goals of the recipient (Bar-Kalifa & Rafaeli, 2013; Cutrona, Shaffer, Wesner, & Gardner, 2007); thus, support attempts may go awry if the provider inaccurately assesses the type of support desired. Not surprisingly, then, characteristics of the support provider, such as the provider's attachment style and interpersonal orientations, goals, and motives, have been shown to play an important role in shaping when and how individuals provide support to their partners (e.g., Cavallo, Zee, & Higgins, 2016; Collins & Feeney, 2000; Crocker & Canevello, 2008; Kappes & Shrout, 2011).

The current study aimed to extend this prior work by identifying a novel individual difference that is highly germane to the context of support exchanges, namely, spouses' general beliefs regarding the effects of stress on well-being and health, referred to as their stress mindset (Crum, Salovey, & Achor, 2013). Whereas a belief that stress is debilitating may inspire greater support provision, a belief that stress is enhancing may hamper support giving, even when support is needed. Therefore, the first goal of the study was to examine whether support providers' own stress mindset, as well as their perceptions of their partner's stress mindset may predict the likelihood and effectiveness of support provision. However, drawing from the vulnerability-stress-adaptation model (Karney & Bradbury, 1995), which suggests that individual differences may interact with features of the environmental context to affect adaptive processes within relationships, the second goal of the study was to examine whether support providers' own stress may moderate the effects of their stress mindset on their support provision. In this way, the

present study was designed to investigate how qualities of both the support provider and the relational context may be associated with the way that spouses provide support to one another.

## 1.1 | Are beliefs about stress associated with support provision?

Although stress is often portrayed as an inherently negative experience, stress does not always have negative consequences for well-being; in fact, in some circumstances, stress may even lead to positive outcomes (Updegraff & Taylor, 2000). A growing literature indicates that individuals' beliefs about stress may play a powerful role in determining the ultimate effects of stress on mental and physical health. These beliefs about the nature of stress have been conceptualized as stress mindset: the extent to which one believes stress is enhancing or that stress is debilitating for various outcomes such as performance and productivity, health and well-being, and learning and growth (Crum et al., 2013). One's stress mindset can influence the way that stress is psychologically and physiologically experienced. For instance, experimentally inducing a stress-is-enhancing mindset has been shown to improve self-reported health and work performance and is related to more adaptive cortisol responses to stress (Crum et al., 2013). Moreover, when stressed, individuals with a stress-is-enhancing mindset exhibit sharper increases in anabolic ("growth") hormones that rebuild cells, synthesize proteins, and enhance immunity, more positive affect, and greater cognitive flexibility compared to those with a stress-is-debilitating mindset (Crum, Akinola, Martin, & Fath, 2017).

Although holding a stress-is-enhancing mindset can be personally beneficial, this mindset may be harmful interpersonally. Holding a stress-is-enhancing mindset leads individuals to underestimate the strain (e.g., somatic symptoms, reduced productivity at work due to health problems, and burnout) of a hypothetical worker experiencing a high workload. Furthermore, experimentally inducing a stress-is-enhancing mindset resulted in lower intentions to help said worker, which was mediated by reduced perceptions of strain (Ben-Avi, Toker, & Heller, 2018). In essence, these findings suggest that stress mindset may be linked to support provision via *social projection*, whereby attempts to evaluate other's support needs are often biased by one's own beliefs, leading to incorrect social judgments (Ames, 2004; Epley, Keysar, Van Boven, & Gilovich, 2004; Krueger, 2007). Therefore, those with a stress-is-enhancing mindset may lack motivation to provide support because they perceive that others need less support for their problems. Conversely, those with a stress-is-debilitating mindset may be more motivated to provide support because they perceive stress as more harmful and thus requiring more support.

In contrast to employer/worker relationships, however, close romantic relationships are characterized by a greater degree of interdependence and intimacy (Rusbult & Arriaga, 2000). As such, spouses may recognize that their partner holds different beliefs about stress than their own, and thus may have a better understanding of their partner's desired support. Thus, support provision may be more strongly influenced by what providers perceive their partner's stress mindset to be, rather than by their own stress mindset. For example, spouses who perceive that their partner has a stress-is-debilitating mindset may provide a greater quantity of and/or more effective support when their partner is stressed, even when they themselves hold a stress-is-enhancing mindset, because they recognize that their partner's support needs are different than their own. Alternatively, support providers with a stress-is-enhancing mindset may withhold support or give inadequate support when their partner is stressed, even if they believe their partner holds a stress-is-debilitating mindset, because they believe stress can be beneficial. Indeed, research has shown that even when people understand other's support desires, they may still choose to provide the support

they think is best, regardless of those desires. For example, one study found that although support providers recognized that their low self-esteem friend desired support that validated their negative feelings, providers were hesitant to give that support, instead opting to positively reframe the experience (Marigold, Cavallo, Holmes, & Wood, 2014). Therefore, the current study examined and compared the potential unique effects of individual's own stress mindset and their perception of their partner's stress mindset on support provision.

## 1.2 | Does stress mindset interact with stressful contexts to predict support provision?

Although previous research on stress mindset suggests that holding a stress-is-debilitating mindset may generally promote support provision, other research suggests that holding a stress-is-debilitating mindset could hinder support provision under some conditions. Specifically, we suggest that the effects of individuals' stress mindset on the likelihood and effectiveness of support provision may differ depending on the level of stress experienced by support providers. Theories on stress spillover within relationships suggests that individuals' own stress may hinder their support provision, as stress can drain couples of the energy and internal resources necessary to engage in adaptive relationship behaviors (Neff & Karney, 2017). For instance, individuals become more self-focused when experiencing stress (Tomova, von Dawans, Heinrichs, Silani, & Lamm, 2014), which can limit their capacity to effectively assess and attend to a partner's support needs. Furthermore, a recent experimental study found that stressed men provided less support when responding to their wives' emotionally toned expressions of stress than did unstressed men (Bodenmann et al., 2015). In contrast to these findings, however, a daily diary study found that individuals' daily stress experiences did not predict their likelihood of providing support to a partner that day (Iida, Seidman, Shrout, Fujita, & Bolger, 2008). Given these mixed results, it seems possible that some individuals may find it more difficult than others to provide support while also managing their own stress.

For instance, although those with a stress-is-debilitating mindset may be generally motivated to provide support to their partners due to their beliefs that stress is harmful and thus requires greater support to overcome, when faced with their own stress, these individuals may find it especially difficult to provide that support. Given that those with a stress-is-debilitating mindset have less adaptive psychological and physiological responses to stress (Crum et al., 2013; Crum et al., 2017), they may be too inundated with coping with their own stress to provide support to their partner. Conversely, those with a stress-is-enhancing mindset generally may underestimate their partner's support needs and thus may be less motivated to provide support (Ben-Avi et al., 2018). However, when faced with their own stress, these individuals may retain a greater ability to provide support compared to those with a stress-is-debilitating mindset, as they are better able to self-regulate in the face of stress. Therefore, the current study tested the moderating effect of support providers' own stress on the association between support providers' stress mindset and their likelihood and effectiveness of support provision.

## 1.3 | The present study

To better understand the factors that may predict the likelihood and effectiveness of support provision within relationships, the current study used a sample of 177 couples to examine

whether individuals' own stress mindset, their beliefs about their partner's stress mindset, and their current experience of stress are associated with the support they provide to their partner. The first goal of the study was to examine the direct effects of individuals' own stress mindset as well as their perceptions of their partners' stress mindset on the likelihood and effectiveness of support provision. We hypothesized that those with a stress-is-debilitating mindset, as well as those who perceive their partner to have a stress-is-debilitating mindset, will provide more and better support to their partner than those with a stress-is-enhancing mindset or those who perceive their partner to have a stress-is-enhancing mindset. We also tested whether one's own mindset or their perception of their partner's mindset is more strongly associated with support provision, though we made no hypotheses about which will be the stronger predictor.

The second goal of the study was to examine the potential moderating role of one's own stress on the association between stress mindset and support provision. We expected that individuals' own stress levels will be more strongly associated with support provision among those who hold a stress-is-debilitating mindset. In other words, those with a stress-is-debilitating mindset were expected to provide less support and less effective support if they are experiencing higher versus lower levels of their own stress. Conversely, those with a stress-is-enhancing mindset were expected to exhibit relatively similar support provision regardless of their experienced levels of stress. However, we had no specific hypothesis about whether individuals with a stress-is-enhancing or a stress-is-debilitating mindset will provide more and better support at high levels of stress; thus, examination of the effect of mindset at high stress was exploratory.

To rule out alternative explanations for any effects found, all analyses adjusted for both spouses' optimism and neuroticism levels, as optimism has been shown to be positively associated with stress-is-enhancing mindset (Crum et al., 2013) and neuroticism is often confounded with reports of stress (McCrae, 1990). Analyses also adjusted for both partners' relationship satisfaction and reports of stress, to account for the fact that individuals are likely to give more support if they are satisfied in their relationship and if their partner is experiencing greater stress. Furthermore, analyses adjusted for both partners' actual stress mindset to examine whether individuals' perceptions of their partner's stress mindset predict support provision above and beyond the partner's actual stress mindset. Gender differences in the effects were also examined, as some previous research suggests that stress may be more strongly linked to men's support provision (Bodenmann et al., 2015; Brock & Lawrence, 2014), it is possible that the interaction between stress mindset and stress will be stronger for men's support provision. Finally, exploratory analyses were conducted to test for differences in the effects based on type of support provided (emotional, physical, informational, and tangible).

## 2 | METHOD

### 2.1 | Procedure

Participants were recruited online from Qualtrics Panels. Individuals whose demographic information on file with Qualtrics indicated that they were currently married were invited to participate in the study. Participants were informed that their spouse must also complete the questionnaire in order for their participation to be considered complete. Participants were compensated \$15 for complete questionnaires through their Qualtrics Panels account. All study materials including the preregistration plan, copies of full measures, data files, and analysis scripts are archived at OSF: <https://osf.io/chv9b/>.

## 2.2 | Participants

G\*Power v3.1.9.2 (Faul, Erdfelder, Lang, & Buchner, 2007) was used to compute the a priori sample size needed to detect an increase in  $R^2$  corresponding to an effect size of  $f^2 = .10$ , which is a small to medium effect size, with .95 power at an alpha level of .05. Results of the power analysis indicated that a total sample size of 191 (at Level 2) is needed. We expected that ~5% of participants may need to be dropped due to missing data or failing attention check items. Thus, we intended to recruit at least 200 couples to ensure enough data for adequately powered tests. A total of 205 couples completed the online survey. Participants were given four items embedded throughout the questionnaire from the Directed Questions Scale (Maniaci & Rogge, 2014) which detects attentional issues and random responding. Items are face valid, giving participants instructions such as “This is a control question. Mark ‘mostly true’ and move on.” Twenty-eight (6.8%) participants who responded incorrectly to one or more of the four items were dropped from analyses, resulting in a final analytic sample of 177 couples.

On average, wives were 53.28 years old ( $SD = 9.60$ ) and husbands were 55.50 years old ( $SD = 10.14$ ). Wives' race/ethnicity breakdowns are as follows: 89.8% White, 2.8% Black, 3.4% Asian, 3.4% Hispanic, and 0.6% Pacific Islander. Husbands' race/ethnicity breakdowns are as follows: 88.7% White, 4.0% Black, 2.8% Asian, 3.4% Hispanic, 0.6% Pacific Islander, and 0.6% are mixed race. Wives and husbands reported an average combined household income of \$70,000 to \$79,000. Wives' highest educational attainments were as follows: 0.6% had less than a high school degree, 18.1% had a high school degree, 20.3% completed some college, 11.3% had an associates' degree, 34.5% had a bachelors' degree, and 15.3% had a graduate degree. Husbands' highest educational attainments were as follows: 1.7% had less than a high school degree, 21.5% had a high school degree, 19.2% completed some college, 9.6% had an associates' degree, 32.8% had a bachelors' degree, and 15.3% had a graduate degree. Wives reported an average relationship length of 26.50 years ( $SD = 12.31$ ) and husbands reported an average relationship length of 26.40 years ( $SD = 12.29$ ). Finally, 98.9% of wives and 99.4% of husbands reported living with their spouse.

## 2.3 | Measures

If less than 10% of items from a single measure were missing, the missing items were imputed with the participant's average score on the remainder of the scale. If more than 10% of items on a measure were missing, the participant's data on this measure was not used. Missing items were not imputed for inventories which assess for discrete events that are not expected to be correlated.

### 2.3.1 | Support provision

The number of supportive behaviors enacted over the past 7 days was assessed with the Support in Intimate Relationships Rating Scale-Revised (SIRRS; Barry, Bunde, Brock, & Lawrence, 2009). The 25-item scale measures different types of support: informational support (e.g., “Gave my partner suggestions about how to handle a situation”), physical comfort (e.g., “Hugged my partner or cuddled with my partner”), esteem/emotional support (e.g., “Told my partner everything would be OK”), and tangible support (e.g., “Offered to do something to help my partner directly with their situation”). Participants indicated how many times they did these things from 0 to 7+ times. Overall composite scores of support provision were obtained by averaging

all 25 items. However, as the SIRRS also contains four subscales, each containing four to eight items, we also calculated participants' scores on each the subscales by averaging the relevant items; these subscale scores were used in place of the overall support provision score in exploratory analyses (alphas ranged from .89–.95 for wives and .87–.95 for husbands). Missing items were not imputed for this scale, as the scale assessed discrete events that are not expected to be correlated.

### 2.3.2 | Support effectiveness

Support recipients' perceptions of the effectiveness of support behaviors enacted by their partner over the past 7 days were assessed with the Social Support Effectiveness Questionnaire (Rini & Dunkel Schetter, 2010). For each of four types of partner support (emotional, physical, informational, and tangible), participants read a brief description of the type of support before responding to questions assessing: (a) how well the quantity of the support matched the amount needed (0 = *very poor* to 4 = *excellent*); (b) the extent to which the respondent wished it had been different somehow (0 = *not at all different* to 4 = *very different*); (c) how good was the partner at providing support (0 = *not good at all* to 4 = *very good at it*); (d) how difficult it was to get support (0 = *never difficult to get* to 4 = *always difficult to get*); and (e) how often the partner offered the support without being asked (0 = *never offered* to 4 = *always offered*). Responses were summed so that scores of each subscale can range from 0 to 20 and total scores can range from 0 to 80, with higher scores indicating more effective support during that time period. Subscales for type of support (emotional, physical, information, and tangible) were created by summing the relevant items and these scores were used in place of the overall support score in exploratory analyses (alphas ranged from .89–.97 for wives and .86–.96 for husbands). For participants with less than 10% of items missing ( $n = 3$ ), missing data was imputed with the participant's average score on the remainder of the scale. No participants missed more than 10% of items on this scale.

### 2.3.3 | Stress mindset

To assess stress mindset, participants completed the Stress-mindset Measure (Crum et al., 2013). The eight-item scale assesses the degree to which participants perceive stress as enhancing or debilitating (e.g., “The effects of stress are positive and should be utilized,” “Experiencing stress debilitates my performance and productivity”). Participants answered on a 0 (*strongly disagree*) to 4 (*strongly agree*) Likert-type scale. Consistent with prior work (Crum et al., 2013), a composite score was obtained by reverse scoring the four negative items and then averaging all eight items. A higher mean score represents a more stress-is-enhancing mindset whereas a lower score represents a more stress-is-debilitating mindset ( $\alpha_{\text{wife}} = .88$ ,  $\alpha_{\text{husband}} = .90$ ). There was no missing data on this scale.

### 2.3.4 | Perception of partner's stress mindset

To assess how participants perceive their partner's stress mindset, the Stress-mindset Measure (Crum et al., 2013) was modified such that participants answered questions about what their

partner believes (e.g., “My partner believes the effects of stress are negative and should be avoided”). A composite score was obtained by reverse scoring the four negative items and then averaging all eight items. A higher mean score represents a more stress-is-enhancing mindset, whereas a lower score represents a more stress-is-debilitating mindset ( $\alpha_{\text{wife}} = .91$ ,  $\alpha_{\text{husband}} = .92$ ). There was no missing data on this scale.

### 2.3.5 | Stressful events

The Revised Daily Hassles Scale (Holm & Holroyd, 1992) was used to assess stressors experienced over the past 7 days. The measure consists of 48 items listing possible hassles in different domains including financial concern (e.g., “Concerns about money for emergencies”), time pressures (e.g., “Too many things to do”), work hassles (e.g., “Problems getting along with fellow workers”), environmental hassles (e.g., “Concerns about news events”), family hassles (e.g., “Problems with one’s children”), and health hassles (e.g., “Concerns about bodily functions”). For each item, participants indicated whether the hassle occurred for them over the past 7 days (0 = *did not occur*), and if it did occur, they responded on a 5-point Likert scale how severe the hassle was (1 = *occurred, not severe*, 5 = *occurred, extremely severe*). A measure of the number of hassles that occurred over the past 7 days was created by taking a count of the number of items endorsed, with scores ranging from 0 to 48. Frequency, rather than severity, of the stressors was used in order to reduce overlap with stress mindset, which may influence the severity ratings ( $\alpha_{\text{wife}} = .91$ ,  $\alpha_{\text{husband}} = .91$ ). Missing items were not imputed for this scale, as the scale assessed discrete events that are not expected to be correlated.

### 2.3.6 | Optimism

The revised Life Orientation Test (LOT; Scheier, Carver, & Bridges, 1994) was used to assess dispositional optimism. Participants were asked to indicate their agreement with 10 items (four of which are filler items) on a scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). To create composite scores, negatively worded items (e.g., “I rarely count on good things happening to me”; “If something can go wrong for me, it will”) were reverse scored and summed with positively worded items (e.g., “I’m always optimistic about my future”; “In uncertain times, I usually expect the best”). Scores on this measure can range from 0 to 24 ( $\alpha_{\text{wife}} = .91$ ,  $\alpha_{\text{husband}} = .90$ ). There was no missing data on this scale.

### 2.3.7 | Neuroticism

Participants completed the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1978) to assess their trait neuroticism. This 23-item questionnaire asks spouses to answer yes or no questions about their negative affectivity (e.g., “Are you a worrier?”, “Are you touchy about some things?”). Responses were coded such that 0 = *no* and 1 = *yes* and responses were summed to create the composite score ( $\alpha_{\text{wife}} = .91$ ,  $\alpha_{\text{husband}} = .92$ ). For participants with less than 10% of items missing ( $n = 3$ ), missing data was imputed with the participant’s average score on the remainder of the scale. No participants were missing more than 10% of items on this scale.



### 2.3.8 | Relationship satisfaction

The 16-item Couples Satisfaction Index (CSI-16; Funk & Rogge, 2007) was used to assess relationship satisfaction. Individuals rated items such as “Our marriage is strong” on a 6-point scale from 0 = *not at all true* to 5 = *completely true*. One item, however, was assessed on a 7-point scale (“Please indicate the degree of happiness, all things considered, of your relationship”; 0 = *extremely unhappy* and 6 = *perfect*). Composites scores were calculated by summing all items, with a possible range of 0 to 81 ( $\alpha_{\text{wife}} = .98, \alpha_{\text{husband}} = .98$ ). For participants with less than 10% of items missing ( $n = 1$ ), missing data was imputed with the participant’s average score on the remainder of the scale. One participant was missing more than 10% of the items on this scale and did not receive a scale score.

## 3 | RESULTS

### 3.1 | Analytic plan

Prior to conducting analyses, all predictor variables were standardized to facilitate comparison of the parameter estimates. Husbands’ and wives’ effects were estimated simultaneously within the same equations using the dual-intercept model outlined by Raudenbush, Brennan, and Barnett (1995) in Stata version 14 (StataCorp, 2015).<sup>1</sup>

Hypothesis 1 was tested using the following equations:

Level 1:

$$\begin{aligned} \text{SupportOutcome}_{ij} = & \text{Husband}(\beta_{0j} + \beta_{1j}\text{OwnMindset}_{ij} + \beta_{2j}\text{PerceivedPartnerMindset}_{ij} \\ & + \beta_{3j}\text{Neuroticism}_{ij} + \beta_{4j}\text{Optimism}_{ij} + \beta_{5j}\text{Stress}_{ij} + \beta_{6j}\text{Satisfaction}_{ij} \\ & + \beta_{7j}\text{PartnerStress}_{ij} + \beta_{8j}\text{PartnerMindset}_{ij}) + \text{Wife}(\beta_{0j} + \beta_{10j}\text{OwnMindset}_{ij} \\ & + \beta_{11j}\text{PerceivedPartnerMindset}_{ij} + \beta_{12j}\text{Neuroticism}_{ij} + \beta_{13j}\text{Optimism}_{ij} \\ & + \beta_{14j}\text{Stress}_{ij} + \beta_{15j}\text{Satisfaction}_{ij} + \beta_{16j}\text{PartnerStress}_{ij} + \beta_{17j}\text{PartnerMindset}_{ij}) + e_{ij}. \end{aligned}$$

Level 2:

$$\beta_{0j-17j} = \gamma_{00-170}.$$

Hypothesis 2 was tested by adding *HusbandMindset*×*HusbandStress* and *WifeMindset*×*WifeStress* interaction terms to the Level 1 equation.

Analyses for Hypotheses 1 and 2 were each conducted with both primary outcome variables (support providers’ reports of support given and support recipients’ reports of the effectiveness of support received), for a total of four primary analyses. Each of these four analyses was also tested without control variables (Hypothesis 1: stress, neuroticism, optimism, relationship satisfaction, partner’s stress, and partner’s stress mindset; Hypothesis 2: neuroticism, optimism, relationship satisfaction, partner’s stress, and partner’s stress mindset) to examine whether effects remain the same without adjusting for controls. Results for the main analyses conducted without controls as well as analyses for each subtype of support (emotional, physical, informational, and tangible) are available in the

Appendix S1; results of these robustness checks were consistent with the results reported below.

### 3.2 | Descriptive statistics

Means, *SDs*, and zero-order correlations are presented in Tables 1 and 2. In general, wives and husbands reported a large number of stressors occurring over the past 7 days; 16.25 (*SD* = 8.76) and 15.26 (*SD* = 9.01) stressful events, on average, respectively. Notably, wives and husbands also reported holding a more stress-is-debilitating mindset on average (wives: mean = 1.27, *SD* = .75; husbands: mean = 1.16, *SD* = .79) and perceiving their partner as having a more stress-is-debilitating mindset on average (wives: mean = 1.19, *SD* = .74; husbands: mean = 1.07, *SD* = .81). In fact, only 37 wives (20.9%) and 29 husbands (16.4%) reported holding a more stress-is-enhancing mindset (i.e., reporting a score at or above the midpoint of the scale of 2) and only 3 (1.7%) wives and 2 (1.1%) husbands reported a truly stress-is-enhancing mindset (i.e., a score of 3 or above), indicating a restricted range in the stress mindset scores in our sample. Husbands' and wives' own mindset were highly correlated with their perception of their partner's mindset (wives,  $r = .55$ ,  $p < .001$ ; husbands,  $r = .59$ ,  $p < .001$ ). Partners' stress mindsets were also highly correlated with each other ( $r = .49$ ,  $p < .001$ ), indicating that couples tend to share similar stress mindsets. Also of note, tests of zero-order correlations did not reveal significant associations between stress mindset and either support provision or support effectiveness for husbands or wives (support provision: wives'  $r = .09$ ,  $p = .212$ , husbands'  $r = -.05$ ,  $p = .479$ ; support effectiveness: wives'  $r = .07$ ,  $p = .365$ , husbands'  $r = .11$ ,  $p = .147$ ).

**Hypothesis 1** *The main effect of stress mindset on support provision and effectiveness.*

The first goal of the study was to examine whether individuals' stress mindset, as well as their perception of their partner's stress mindset, were associated with support provision and support effectiveness, as rated by their partner. For support provision, results of the multilevel model (shown in Table 3) show that wives' own stress mindset was significantly, positively associated with their own reports of their support provision ( $B = .27$ ,  $p = .027$ ),

**TABLE 1** Descriptive statistics of all study variables

	Range	Wives		Husbands	
		Mean	<i>SD</i>	Mean	<i>SD</i>
Support provision	0–7	2.58	1.48	2.61	1.51
Support effectiveness	0–80	51.24	19.25	57.08	16.69
Stress mindset	0–4	1.27	.75	1.16	.79
Perception of partner's stress mindset	0–4	1.19	.74	1.07	.81
Neuroticism	0–23	9.00	6.23	6.02	5.75
Optimism	0–24	14.35	5.20	14.28	4.99
Stressful events	0–48	16.25	8.76	15.26	9.01
Relationship satisfaction	0–81	58.44	18.90	62.42	17.30

Note:  $N = 177$  couples.

**TABLE 2** Correlations between all study variables

	1	2	3	4	5	6	7	8
1. Support provision	.73***	.39***	.09	−.08	−.09	.22**	.35***	.43***
2. Support effectiveness	.33***	.67***	.07	.03	−.34***	.37***	−.04	.77***
3. Stress mindset	−.05	.11	.49***	.55***	−.30***	.17*	−.13	.11
4. Perception of partner's stress mindset	.06	.02	.59***	.56***	−.20**	.13	−.15*	.07
5. Neuroticism	.06	−.30***	−.30***	−.16*	.22**	−.57***	.38***	−.42***
6. Optimism	.08	.19*	.28***	.15*	−.50***	.25***	−.23**	.40***
7. Stressful events	.25**	.00	−.11	.00	.46***	−.24**	.72***	−.10
8. Relationship satisfaction	.34***	.75***	.08	.05	−.33***	.27***	−.03	.84***

Notes: N = 177 couples. Correlations for husbands appear below the diagonal and correlations for wives appear above the diagonal.

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

indicating that wives holding a more stress-is-enhancing mindset provided more support to their partner, contrary to our hypothesis. Wives' perceptions of their partner's stress mindset were not significantly associated with wives' reports of their own support provision ( $B = -.31, p = .080$ ). The effect of wives' stress mindset and perception of partner's mindset on their support provision did not significantly differ ( $\chi^2 = .05, p = .831$ ), indicating that wives' stress mindset was not a stronger predictor of support provision than wives' perceptions of partner's stress mindset. For husbands, neither their own stress mindset nor their perception of their partner's stress mindset were significantly associated with reports of their own support provision (own stress mindset:  $B = -.17, p = .164$ ; perception of partner's stress mindset:  $B = -.18, p = .257$ ). Further analysis revealed that the effect of own stress mindset on support provision was significantly stronger for wives than for husbands, indicating a true gender difference ( $\chi^2 = 6.49, p = .011$ ).

For support effectiveness, results of the multilevel model (shown in Table 3) indicate that husbands' and wives' own stress mindset was not significantly associated with their partner's reports of support effectiveness (husbands:  $B = -.25, p = .843$ ; wives:  $B = -1.58, p = .206$ ). However, husbands' perceptions of their partner's stress mindset were significantly, positively associated with their partner's reports of support effectiveness ( $B = 4.09, p = .014$ ), indicating that husbands who perceive their partner as having a more stress-is-enhancing mindset provided better support to their partner, which was again contrary to our predictions. The effect of husbands' stress mindset and husbands' perception of partner's stress mindset on their support effectiveness did significantly differ ( $\chi^2 = 5.34, p = .021$ ), indicating that husbands' perceptions of partner's stress mindset was a stronger predictor of their support effectiveness than their own stress mindset. Finally, wives' perception of partner's stress mindset was not significantly associated with their partners' reports of support effectiveness ( $B = -.59, p = .741$ ). Further analyses indicated the effect of perceptions of partner's stress mindset was not significantly stronger for husbands than for wives, suggesting that this is not a robust gender difference and should be interpreted with caution ( $\chi^2 = 3.66, p = .056$ ).

**TABLE 3** Results of multilevel models

	Hypothesis 1: support provision	Hypothesis 1: support effectiveness	Hypothesis 2: support provision	Hypothesis 2: support effectiveness
Husband				
Constant	2.61 (.09)***	51.24 (.95)***	2.61 (.09)***	50.97 (.95)***
Stress mindset	-.17 (.12)	-.25 (1.26)	-.17 (.12)	-.06 (1.25)
Perception of partner's stress mindset	-.18 (.16)	<b>4.09 (1.66)*</b>	-.19 (.16)	3.82 (1.65)*
Neuroticism	.22 (.13)	.69 (1.29)	.22 (.13)	.90 (1.28)
Optimism	.18 (.11)	2.11 (1.13)	.18 (.11)	2.30 (1.12)*
Stressful events	.11 (.15)	.69 (1.52)	.11 (.15)	.55 (1.51)
Relationship satisfaction	.56 (.10)***	12.92 (1.03)***	.56 (.10)***	12.91 (1.02)***
Partner's stress mindset	.47 (.15)**	-2.31 (1.55)	.47 (.15)**	-2.34 (1.53)
Partner's stress	.30 (.14)*	-1.10 (1.42)	.30 (.14)*	-1.12 (1.40)
Stress mindset × stress			-.02 (.10)	<b>-2.48 (1.00)*</b>
Wife				
Constant	2.58 (.09)***	57.04 (.96)***	2.57 (.09)***	56.92 (.95)***
Stress mindset	<b>.27 (.12)*</b>	-1.58 (1.25)	.28 (.12)*	-1.28 (1.27)
Perception of partner's stress mindset	-.31 (.17)	-.59 (1.79)	-.31 (.18)	-.81 (1.79)
Neuroticism	.08 (.13)	-2.39 (1.32)	.08 (.13)	-2.28 (1.31)
Optimism	.25 (.12)*	.95 (1.20)	.26 (.12)*	1.05 (1.19)
Stressful events	.58 (.14)***	3.28 (1.47)*	.57 (.14)***	3.06 (1.47)*
Relationship satisfaction	.60 (.11)***	10.18 (1.11)***	.59 (.11)***	10.03 (1.11)***
Partner's stress mindset	.08 (.16)	1.12 (1.69)	.08 (.16)	1.08 (1.67)
Partner's stress	.03 (.13)	-1.20 (1.38)	.04 (.14)	-1.03 (1.38)
Stress mindset × stress			-.04 (.10)	-1.01 (1.00)

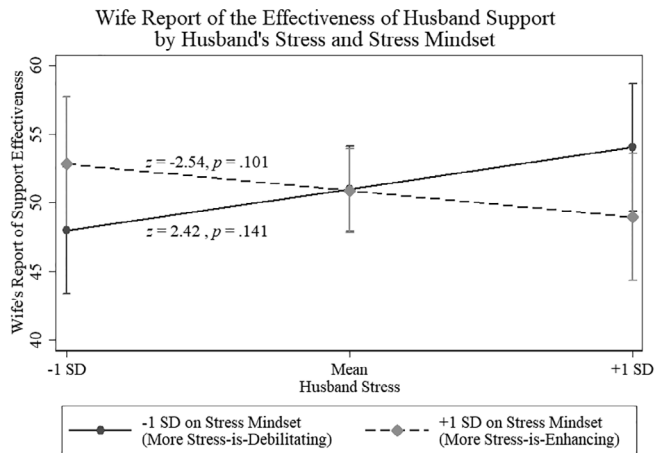
Notes: SEs in parentheses. Bold indicates parameters of interest that are significant.  $N = 177$  couples.

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

**Hypothesis 2** *The moderating role of stress on the association between stress mindset and support provision.*

The second goal of the study was to examine whether individuals' own stress may moderate the effects of their stress mindset on support provision and effectiveness. As seen in Table 3, the

**FIGURE 1** Effects of husbands' stress mindset by husbands' stress on wives' reports of support effectiveness. *Note:* The interaction between husbands' stress mindset and husbands' stress was significantly associated with wives' reports of their husbands' support effectiveness ( $B = -2.48, p = .013$ )



interaction between stress and stress mindset was not significantly associated with support provision for husbands or wives (husbands:  $B = -.02, p = .872$ ; wives:  $B = -.04, p = .705$ ). For support effectiveness, results of the multilevel model (shown in Table 3) revealed that the interaction between husbands' stress mindset and husbands' stress was significantly associated with wives' reports of their husbands' support effectiveness ( $B = -2.48, p = .013$ ). However, decomposing this interaction revealed that the overall pattern of results was not as hypothesized. As seen in Figure 1, it appears that husbands holding a more stress-is-debilitating mindset provided more effective support, as rated by their partner, when coping with higher levels of their own stress compared to husbands holding a stress-is-enhancing mindset. However, tests of simple slopes for stress mindset at one standard deviation above and below the mean (which represent a more stress-is-debilitating and more stress-is-enhancing mindset, respectively) indicate that the slopes are not significantly different from zero ( $-1 SD: z = 2.42, p = .141$ ;  $+1 SD: z = -2.54, p = .101$ ). Thus, the significant interaction appears to be driven by extreme scores (beyond 1 SD) on stress mindset. For wives, the interaction between their stress mindset and their level of stress was not significantly associated with husbands' reports of support effectiveness ( $B = -1.01, p = .313$ ). There was no gender difference in the effect of the interaction between stress mindset and stress on support effectiveness ( $\chi^2 = 1.08, p = .299$ ).

#### 4 | DISCUSSION

The goal of the current study was to examine the potential relevance of a novel antecedent for support provision. Namely, we examined whether individuals' stress mindset (i.e., the extent that one believes stress is enhancing or that stress is debilitating) is associated with individuals' likelihood of providing support and the effectiveness of that support. Those with a stress-is-enhancing mindset tend to have more adaptive responses under stress in comparison to those with a stress-is-debilitating mindset (Crum et al., 2013); thus they tend to underestimate others' needs under stress and provide less support (Ben-Avi et al., 2018). Consequently, we predicted that individuals with a stress-is-enhancing mindset would report providing less support to their partner and their partner would rate their support as less effective. We also examined whether the effects of stress mindset are moderated by the context; that is whether providers' experiences of stress will interact with their stress mindset to influence support provision. Given that those

with a stress-is-enhancing mindset tend to have more adaptive responses under stress, we predicted that their support provision will remain more stable under stress, whereas those with a stress-is-debilitating mindset will have more difficulty providing support when they are stressed. Thus, the current study investigated how qualities of the support provider and the relational context may be associated with the way that spouses provide support to one another.

Overall, the results of the study provided little support for our hypotheses. First, although wives' stress mindset was significantly associated with their support provision, this effect was in the opposite direction of our hypothesis: wives with a more stress-is-enhancing mindset provided *more* support to their partner. Similarly, there was a significant association between husbands' perceptions of their partners stress mindset and their support effectiveness, but again, husbands who perceived their partner as holding a more stress-is-enhancing mindset provided *more effective* support to their partner, contrary to our hypothesis. Second, when examining the potential interaction between providers' stress mindset and their own stress levels, only one effect out of four emerged as significant, and again, it was opposite of what was predicted. It appeared that husbands holding a more stress-is-debilitating mindset provided more effective support, as rated by their partner, when coping with higher levels of their own stress compared to husbands holding a stress-is-enhancing mindset; however, the slopes were not significantly different from zero (see Figure 1). Thus, only three statistically significant results emerged in this study and all three effects were opposite of the hypothesized direction, providing very little evidence to suggest that individuals' stress mindset plays a notable role in shaping support provision within romantic relationships. These results raise the question of whether stress mindset has interpersonal consequences to the same degree that it has intrapersonal ones. Most research on the consequences of stress mindset have focused on whether individuals' beliefs about stress may influence their coping responses to stressful experiences (e.g., Crum et al., 2013; Crum et al., 2017). To date, only one prior study has examined the potential interpersonal consequences of stress mindset; notably, this study relied on hypothetical scenarios to examine whether stress mindset may be linked to support provision in the workplace (Ben-Avi et al., 2018). Given the paucity of work examining the interpersonal consequences of stress mindset, it is possible that stress mindset does not explain much of the variance in relationship functioning. In other words, stress mindset might matter more for how individuals respond to their own stress and not for how they respond to others' stress. This lack of interpersonal consequences might be especially likely when the other is a close romantic partner. When individuals do not have full knowledge of others' needs in a context like the workplace, they might fall back on their own beliefs to determine how to provide support. However, in a romantic relationship there are stronger interdependence and relationally-oriented concerns that are essential for maintaining the relationship, and thus, individuals may not rely on their general beliefs about stress to inform their actions in the relationship. Other factors may instead be more likely to shape support processes, such as attachment styles and interpersonal orientations, goals, and motives, that are more proximal to relationship processes (Cavallo et al., 2016; Collins & Feeney, 2000; Crocker & Canevello, 2008; Kappes & Shrout, 2011).

The results of the current study should be interpreted cautiously in light of several important limitations of the data. First, as previously mentioned, on average participants reported holding a more stress-is-debilitating mindset in the current study. Although this finding is generally consistent with prior work, our sample nonetheless seemed to exhibit a more restricted range of scores on this measure. The means reported in the current study (1.16 for wives and 1.27 for husbands) are lower than means reported in prior work, which tend to range from 1.5 to 1.7 (Crum et al., 2013; Crum et al., 2017; Kilby & Sherman, 2016). Moreover, only three (1.7%) wives and two

(1.1%) husbands reported a mindset score at or above 3, which clearly indicates a stress-is-enhancing mindset. It is not entirely clear why our sample had such a restricted range of stress mindset scores on the stress-is-enhancing side; however, this fact may have influenced the results. In fact, it is worth noting that the only prior study to examine (and find) interpersonal consequences of stress mindsets reported that their sample held a stress-is-enhancing mindset on average (mean: 3.22, *SD*: 1.13; Ben-Avi et al., 2018), and this is the only study on stress mindset in which participants reported holding a stress-is-enhancing mindset on average.

A second limitation is that the current study was cross-sectional in nature. Thus, individuals were asked to retrospectively report their stressors and behaviors from the last 7 days. Given that retrospective reports, particularly of specific relationship behaviors such as support, are often biased (i.e., sentiment override effects; Weiss, 1984), the data provided may not have accurately captured support exchanges between partners. Future research may want to consider examining the effects of stress mindset on support processes using a daily diary design in order to more precisely examine naturally occurring support provision within the relationship.

## 4.1 | Conclusions

To summarize, the results of the current study do not provide convincing evidence that stress mindset plays an important role in shaping support provision among couples. Nonetheless, this is the first study to examine the potential effects of stress mindset in the context of romantic relationships. Thus, future research is needed to replicate these results and determine whether stress mindset does indeed have interpersonal consequences or whether this construct is more applicable to individual well-being.

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## ENDNOTE

<sup>1</sup> We expected that some same-sex couples would be present in the sample. Thus in our preregistered analyses we intended to treat dyads as indistinguishable and test for gender differences with two- and three-way tests of moderation respectively for Hypotheses 1 and 2. However, the final sample consisted only of different-sex couples, therefore it was more parsimonious, and provided greater power, to treat the sample as distinguishable by sex and use dual-intercept models. Tests for gender differences were conducted by testing whether husband and wife parameters from the same model significantly differed.

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