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External Stressors and Trajectories of Marital Quality During the Early Years of Chinese Marriage: Buffering Effects of Resources at Multiple Ecological Levels

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Abstract

Drawing from the stress resistance process within the conservation of resource theory, this study examined how resources at multiple ecological levels -- personal (self-esteem), relational (spousal support), social network (relationships with parents and parents-in-law) -- moderate the spillover and crossover effects from external stressors to the trajectories of marital quality. We used three-annual-wave, dyadic data from 268 heterosexual Chinese couples who were at the beginning stages of marriage. Consistent with theory, personal, relational, and social network resources all buffered the detrimental effects of external stressors for marital quality. Further, nuanced findings emerged, likely given the social cultural context in contemporary China. Specifically, gender differences emerged in whether a specific resource attenuated the detrimental effects of external stressors (e.g., husbands' versus wives' self-esteem attenuated detrimental effects of external stressors). Moreover, opposite patterns existed for the short-term versus long-term results for husbands' relational resources. In sum, our findings highlight that: When helping couples cope with stressors, it is necessary to (a) include available resources at multiple ecological levels (relational, personal, social network); (b) consider whether social cultural backgrounds may have influenced the effectiveness of a specific resource.

Keywords: Chinese couples, external stressors, marital quality, moderating, resources at multiple levels

External Stressors and Trajectories of Marital Quality During the Early Years of Chinese Marriage: Buffering Effects of Resources at Multiple Ecological Levels

External stressors originate outside of the close relationship (e.g., workplace and finance; Randall & Bodenmann, 2017). To date, the associations between external stressors and relationship quality (i.e., the subjective, global evaluation of relationship satisfaction and happiness; Fincham & Bradbury, 1987) have been well articulated (for a review, see Neff, & Karney, 2017). Further, researchers have depicted trajectories of marital quality and found that external stressors experienced by one partner can predict over-time decreases of relationship quality of not only themselves (spillover effect) but also of their partners (crossover effect; e.g., Lavner et al., 2012).

As external stressors are often detrimental and inevitable, it is necessary to identify factors that attenuate the negative effects of external stressors. The majority of existing studies on this topic has focused on spousal support (i.e., support provided by intimate partner), primarily because unresolved and poorly handled stressors by one partner impede the well-being of both spouses, and spousal support enhances couple satisfaction (Bodenmann et al., 2016). Although informative, two critical limitations exist in the literature.

First, following the stress resistance process within the conservation of resource theory -- hereafter referred to as the *stress resistance process* -- individuals can use both personal characteristics (i.e., personalities related to the sense of mastery and control) and supportive social relationships as resources to limit the detrimental effects of stressors (Hobfoll, 1985, 1989). Whereas the romantic relationship is the most central social relationships for most adults, the couple relationship is embedded within a broader social network involving friends and families (Felmlee, 2001). Thus, focusing primarily on spousal support (i.e., resources specific to romantic relationships), yet ignoring personal

characteristics or social network, may generate a piecemeal understanding of resources that can protect couple relationships from the spillover and crossover effects of external stressors.

Second, studies based on non-Western couples are still relatively limited (Fonseca et al., 2016). Yet, social cultural contexts may have shaped the stressful experiences of couples of different populations (Story & Bradbury, 2004). Further, the effectiveness of resources in attenuating the detrimental effects of external stressors may vary due to cultural values and social norms (Hobfoll, 1988). More efforts are needed to examine the extent to which the well-documented findings from Western cultural backgrounds (i.e., findings that spousal support attenuating detrimental effects of external stressors) can be generalized to non-Western cultural backgrounds. Researchers also need to identify whether specific resources are uniquely beneficial among non-Western couples. Thus, we used data from Chinese couples, providing a contrast with the dominant research on Western couples.

Theoretical Framework

The stress resistance process (Hobfoll, 1985, 1989) historically focused on personal outcomes (physical and emotional health) vs. couple relationship well-being. Nevertheless, this theory helps extend the literature on couple relationships by providing a more comprehensive understanding of different resources that may buffer spillover and crossover effects of external stressors on relationship quality.

As noted, the stress resistance process argues that personal characteristics and supportive social relationships function as personal and relational resources, respectively, in stressful conditions (Hobfoll, 1985, 1989). Further, social resources can be decomposed into relational resources (resources shared between two spouses) and social network resources (supportive relationships with family, friends, and other individuals or groups around the couple; Young et al., 2019). The consideration for such decomposition is that the two spouses experience external stressors

and interact with the social network together (Bodemann, 1997; Sprecher et al., 2002).

Based on the stress resistance process, individuals use all available resources to cope with external stressors, and negative consequences occur when stressors exceed resources (Hobfoll, 1985, 1989). Guided by the stress resistance process, we examine how multiple resources -- personal, relational, and social network -- moderate associations from external stressors to relationship quality.

Personal Resources: Self-Esteem

Self-esteem -- the personal resource in the present study-- refers to individuals' appraisals of their own value (Erol, & Orth, 2013). External stressors can deplete relationship well-being by undermining efforts that are otherwise used to maintain the relationship and by increasing negative emotions in partners (Neff, & Karney, 2017). Yet, these two ways in which external stressors jeopardize couple relationship well-being may *not* be true for those with high self-esteem, given that individuals with high (vs. low) self-esteem often engage in more problem-specific, active coping and less emotion-specific, avoidant coping (Dumont & Provost, 1999). Thus, individuals with high self-esteem may solve stressors in effective ways, leaving them more time to engage in activities that promote relational intimacy. Further, individuals with high self-esteem generally experience more pleasant, positive emotions and are less overwhelmed by anxiety and distress under stress (Mäkikangas & Kinnunen, 2003). Thus, for individuals with high self-esteem, external stressors should not engender tendencies to express more negative emotions (Callea et al., 2017).

Connecting to the current sample, Chinese society has been traditionally organized by collectivism that emphasizes interpersonal relationships more than personal capabilities (Lui & Rollock, 2018). When stressors occur, collectivistic individuals often rely more on social relationships than personal capabilities, underscoring why positive associations between self-esteem and mental health are weaker in collectivistic vs. individualistic cultures (Steel et al.,

2018). Yet, the "1978 reform and opening-up policy" promoted exchanges between Chinese and Western countries, with the emphasis on personal capabilities now be from Western cultures to contemporary China (Ji, 2015). Thus, self-esteem may become an increasingly important personal resource that helps Chinese couples cope with stressors. *Collectively, self-esteem should attenuate negative associations from high external stressors to low couple relationship well-being for the Chinese couples in this study.*

Relational Resources: Spousal Support

Spousal support -- the relational resource in the present study -- refers to support provided by romantic partners (Gariepy et al., 2016). Spousal support exists in multiple ways (e.g., emotional support such as encouragement or informational support such as suggesting) and is deemed as effective by receivers (High & Steube, 2014). Romantic partners are generally the primary figures with whom adults are attached (Shaver & Mikulincer, 2006). Relational partners are therefore the primary source of support for individuals experiencing external stressors, underscoring why spousal support is often more beneficial than support from families and friends (Reid & Reczek, 2011; Gariepy et al., 2016). Not surprisingly, high spousal support attenuates negative associations between high external stressors and low couple relationship well-being among Western couples (e.g., Breitenstein et al. 2018).

Connecting to the current sample, Chinese marriage historically emphasizes partners' responsibilities and obligations (Ng et al., 2010). While many Chinese spouses gradually accept the Western marital culture of intimacy, the responsibilities and obligations did not fade in Chinese marriages (Fok & Cheng, 2018). Thus, affectional bonds in Chinese marriages seem increasingly solid as the combinations of responsibilities and intimacy, which then increases partners' tendencies to support each other. However, such arguments for increased relational resources may not be true for Chinese couples in the beginning stages of marriage (the current sample). Given the "one-child policy" in China, the majority of

individuals from the current sample were the only child in their family of origin and often grew up with parental indulgence (Settles et al., 2013). Thus, Chinese individuals in the beginning stage of marriage may have developed an egocentric tendency and prefer relational over-benefitting (Lan et al., 2017). Such egocentric tendencies may desensitize these individuals from detecting spousal needs or providing appropriate spousal support. *Collectively, these social changes and traditional norms may have engendered uncertainty about the role of spousal support (i.e., relational resource) in associations from external stressors to marital quality among Chinese couples in the early stage of marriage.*

Social Network Resources: Relationships with Parents and Parents-in-Law

Relationships with parents and parents-in-law (i.e., the extent of closeness in the relationships with parents and parents-in-law) are the social network resource in the present study. Social network includes a collection of people known by individuals (e.g., extended family related by blood and marriage, close friends; Schmeeckle, & Sprecher, 2004). In response to calls for studies examining how social network resources benefit couple relationship well-being (Chong et al., 2017), we focused particularly on relationships with parents and parents-in-law for two reasons. First, the number of friends and closeness with friends decrease after marriage, and relationships with other extended family members such as siblings-in-law are generally distant (Vanhoutteghem et al., 2014). In contrast, in both Western and non-Western cultures, frequency and emotional involvement is of modest to high levels in the contact with parents and parents-in-law, especially during the first several years of marriage (Danielsbacka et al., 2015). Second, and based on both Western and non-Western samples, closeness of couple relationship with parents and parents-in-law often predict high relationship quality (Cao et al., 2019; Fingerman et al., 2012).

Connecting to the current sample, relationships with parents and parents-in-law may be uniquely beneficial resources in Chinese marriages for two reasons. The first reason is

geographical proximity. About 66% of Chinese couples live with at least one parent and parent-in-law (e.g., versus 14 % in Western countries; Kim et al., 2015). Even for Chinese couples who lived independently in their own house, the commute to visit parents and parents-in-law takes no more than one hour (Chu et al., 2011). Such geographical proximity with parents and parents-in-law renders this resource more accessible for Chinese couples vs. Western couples.

The second reason for why we regard relationships with parents and parents-in-law as resources in Chinese marriage is the social belief. Couples in Western countries are typically viewed as autonomous units that function separately from extended families (Morr Serewicz, 2006). Receiving assistance from parents and parents-in-law in stressful conditions sometimes creates burdens (versus relief), presumably because the assistance erodes the autonomy of married Western individuals (Reid & Reczek, 2011). In contrast, Chinese couples are highly interdependent with their extended family, and it is expected and necessary for married couples to rely on parents and in-law in stressful conditions (Nie et al., 2015). *Collectively, close relationships with parents and parents-in-law should attenuate negative associations between high external stressors and low couple relationship well-being for the Chinese couples in this study.*

Present Study

Using three-annual-wave, dyadic data from 268 Chinese couples, our central aim is to examine whether each of the personal, relational, or social network resources moderate the spillover and crossover effects from external stressors to trajectories of marital quality. We conceptualized trajectories of marital quality across Waves 1, 2, and 3 (W1, 2, and 3) as the outcome, replicating earlier studies demonstrating that external stressors predict the over-time development of relationship quality (e.g., Lavner et al., 2012) while also helping to illuminate whether and how the moderating roles of resources unfold across time.

Method

Participants and Procedures

We used data from Chinese Newlyweds Longitudinal Study (CNLS) and data collection procedures were approved by the university's Institutional Review Board [for details, see Cao et al. (2019) and Li et al. (2020)]. Researchers of the CNLS project recruited Chinese, heterosexual couples via online advertisements, community posters, and acquaintance referrals. To be eligible, couples were in their first marriage, without a child, married for less than 3 years, and living in Beijing.

In 2011 (W1), 268 couples participated the survey. In 2012 (W2) and 2013 (W3), 224 couples (retention rate=83.58%) and 203 couples (retention rate=75.75%) participated in the research project. For each couple and at each wave, husbands and wives separately completed a self-report survey. Upon the completion, each couple received 100 RMB (16 USD).

For all 268 couples at W1, the average length of marriage was 13.6 (*SD* = 9.7) months. Average age was 29.6 (*SD* = 3.2) years old for husbands and 28.1 (*SD* = 2.5) years old for wives. Median levels of monthly income were 7,000 RMB (*SD* = 6,180.2; 1017.3 USD) for husbands and 5,000 RMB (*SD* = 3,996.0; 726.6 USD) for wives. The mode of education was a bachelor's degree for husbands and wives.

Measures

External stressors (W1). A 19-item stressful life event experienced scale assessed external stressors (see Supplementary Document #1 for all items). The 19 items were adapted from the Life Experiences Survey (Sarason et al.,1978), the Relationship Issues Survey (Epstein & Werlinich, 1999), and the Life Event Scale (Yang & Zhang, 1999). Example items were "housing difficulties" and "exhaustion and tiredness in work/academy." On each item, participants responded how often the event occurred during the past 12 months on a 4-point Likert scale ranging from 1 (*never*) to 4 (*a lot*). Average scores (versus sum scores) of

the 19 items were calculated following Little's (2013) statistical guidelines, with higher scores indicating more external stressors (Coefficient *α*s: .73 for husbands; .71 for wives).

Self-esteem (W1; Personal Resources). The 10-item unidimensional, Rosenberg Self-Esteem scale (RSE; Rosenberg, 1979) assessed self-esteem. Partners responded to each item on a 4-point Likert scale ranging from 1 (*very strong disagreement*) to 4 (*very strong agreement*). Example items were "On the whole, I am satisfied with myself" and "I certainly feel useless at times (reverse)". With reverse items recoded, average scores for the 10 items were calculated following Little's (2013) statistical guidelines and existing studies (Gnambs & Schroeders, 2020; Greenberger et al., 2003). Higher scores indicated higher self-esteem (Coefficient *α*s: .83 for husbands, .86 for wives).

Spousal support (W1; Relational Resources). The revised Support in Intimate Relationships Rating Scale (SIRRS; Barry et al., 2009) included the following four subscales: esteem/emotional, physical comfort, informational, and tangible supports. The *esteem/emotional support* subscale included 8 items (e.g., told me everything would be okay). The *physical comfort* subscale included 4 items (e.g., held my hand). The *informational support* subscale included 8 items (e.g., shared facts or information with me about a situation I was facing). The *tangible support* subscale included 5 items (e.g., did something to help me directly). For each item, respondents indicated how often their partners enacted specific support behavior on a 4-point Likert scale ranging from 1 (*never*) to 4 (*often*). For the scores of each subscale, item scores were averaged following Little's (2013) statistical guidelines (Coefficients *α*s for the four subscales: .81- .88 for husbands, .89- .91 for wives). To obtain a final score of spousal support that was used in analyses, we followed the strategy of previous studies and assigned equal weights to each subscale of the multidomain measure (Lake, 2002). Given the research focus and according to the confirmatory factor analysis (CFA) of which the findings demonstrated the plausibility of

treating four subscales as indicators on one latent construct (see Supplementary Document # 2 for details), We averaged subscale scores for esteem/emotional, physical comfort, informational, and tangible supports, with higher scores indicated higher spousal support (Coefficient *α*s across the four subscales: .75 for husbands, .74 for wives).

Relationship with parents and parents-in-law (W1; Social Network Resources). Four self-developed items assessed each partner's relationships with father, mother, father-in-law, and mother-in-law (see Supplementary Document #1 for all items). Individuals responded to each item on a 5-point Likert scale ranging from 1 (*very bad*) to 5 (*very good*). Given the research focus and according to CFA of which the findings demonstrated the plausibility of treating four items as indicators on one latent construct (see Supplementary Document # 3), average scores were calculated following Little's (2013) statistical guidelines, with higher scores indicating more close relationship with parents (Coefficient *α*s: .83 for husbands, .79 for wives).

Marital Quality (W1, W2, W3). The 6-item unidimensional Quality Marriage Index Scale (QMI; Norton, 1983) assessed relationship or marital quality. Partners responded to the first five items on a 7-point Likert scale ranging from 1 (*very strong disagreement*) to 7 (*very strong agreement*). An example item was "We have a good marriage." Individuals indicated how happy they were in their relationship with all things considered (i.e., the sixth item). The response ranged from 1 (*very unhappy*) to 10 (*perfectly happy*). Average scores for all six items were calculated following Little's (2013) statistical guidelines and existing research (Cao et al., 2019), with higher scores indicating higher relationship quality (Coefficient *α*s across the three waves: .93, .95, and .96 for husbands, .95, .96, and .97 for wives).

Covariates. Beyond each couple's marital length as well as husbands' and wives' age, education, and income, another two covariates were measured using binary variables and for each couple: Cohabiting before marriage (0 = not cohabiting together before marriage; 1

= cohabiting before marriage); parental status (0 = not having a child; 1 = having at least one child by W3).

Analytic Plans

Analyses were conducted in R 4.0.0 (R Core Team, 2020) in three steps: (1) addressing the distribution of outcomes, (2) missing data imputation, and (3) model estimation.

Step 1: Addressing the distribution of outcomes. Husbands' and wives' marital quality were strongly left skewed. Within a potential range of 1 to 7.5 on the QMI, a notable proportion of participants reported full marks, indicating they were in highly happy and satisfied marital relationships. Realizing that skewness can bias analyses, we first followed the conventional wisdom to conduct transformations (Clark et al., 2016; Tijmstra, 2018). Yet the transformed scores were still strongly skewed. We then switched to a less common approach and reversed the original QMI scores to zero-inflated distributions, given that the well-established procedures for handling zero-inflated distributions (Yang et al., 2017) allow us to properly model recoded outcome and obtain unbiased estimation. To obtain the zero-inflated distributions, we subtracted the original score of marital quality from 7.5, the highest possible score of the scale.

Step 2: Missing data imputation. As described under Participants and Procedures, the proportion of participant attrition at W2 and W3 were higher than 10%. By conducting multivariate analysis of variance on key study constructs at W1 and demographic information, we found two statistically significant differences (in husbands' W1 marital quality and wives' income) between those who participated in all three waves vs. those who did not. We then used variables from Wave 1 as auxiliary predictors to conduct multiple imputation on variables at W2 and W3 (Pedersen et al., 2017). Five imputed datasets were generalized and used in the next stage.

Step 3: Model estimation. We conducted multilevel modeling (MLM) using *brms* 2.13.0 to account for the non-independence in the dyadic, longitudinal data we used. The R package of brms 2.13.0 used Stan to estimate Bayesian multilevel models (Bürkner, 2018). We preferred Bayesian to traditional Null-Hypothesis Significance Testing (NHST) for two reasons. First, Bayesian analyses are less sensitive than NHST to sample size and will therefore generate more robust estimation (Branch, 2014). Second, Bayesian estimation reflects the uncertainty of the population parameter better than NHST. In particular, NHST represents the uncertainty of the parameter using a confidence interval (CI), which reflects the upper and lower limits of values that may not be rejected by $p < .05$ but provides no probability that the specific parameter value is within the range. In contrast, Bayesian estimation explicitly indicates the uncertainty of parameters by generating the posterior distribution (i.e., high density interval (HDI); Kruschke & Liddell, 2018), which reflects the probability that the specific parameter is within the range.

To determine whether a notable effect exists, researchers typically report the 95% HDI: A 95% HDI not including 0 provides evidence for the existence of an effect (Makowski et al., 2019). However, other researchers have argued for an 89% HDI due to being more stable than a 95% HDI (Makowski et al., 2019). As a compromise, we report both the 95% HDI and the 89% HDI, with a 95% HDI that did not contain 0 regarded as *strong evidence* and 89% HDI that did not contain 0 regarded as *modest evidence for* the existence of notable effects. We used 4 chains to generate posterior distributions (for each chain, the number of iterations = 2000, and burnin iterations= 1000). Model convergence was checked based on effective sample sizes and visualization of trace plots.

Given zero-inflated distribution of the outcomes (i.e., the recoded scores of marital quality), we chose the hurdle-gamma regression in *brms*. Hurdle-gamma regression includes two model components: (a) *a binary part* that predicts, *among all participants*, whether or

not the outcome is zero as a function of the predictors, and (b) a *continuous part* that predicts, *among those who respond nonzero on outcome variables*, whether the score increases or decreases as a function of the predictors (Hofmans, 2017).

Connected to the current study: Zero on the recoded score of QMI equates to 7.5 (highest possible score) on the original QMI and therefore indicates highly satisfied relationships. The *binary part* of the hurdle analyses predicts, *for all participants,* the likelihood of husbands and wives being in highly satisfied relationships as a function of external stressors and resources.

As also connected to the current study: Nonzero values on the recorded scores of QMI indicate unhappiness and dissatisfaction. The *continuous part* of the hurdle analyses predicts, *among those who were not in highly satisfied relationships,* whether some participants reporting more relational distress than others as a function of external stressors and relational resources.

We chose the hurdle-gamma regression as this analysis can properly handle zero-inflated distributions (Hofmans, 2017). Further, this analysis has the advantage of reflecting the similarities and differences between the results of the binary part (predicting whether participants were in highly satisfied relationships) vs. the continuous part (predicting the level of relational distress among those who were not in highly satisfied relationships). Given this statistical advantage, the use of hurdle-gamma regression analysis in couple relationship research may open up new research directions allowing researchers to examine the ways in which to keep desirable relational outcomes among those in very satisfied relationships as distinct from ways that prohibit further increases in distress among already experiencing some unhappiness and dissatisfaction.

Before examining our research aims, we conducted preliminary analyses (i.e., Model 1, Model 2). We first specified an unconditional growth model (Model 1) to estimate the

trajectories of marital quality (i.e., the proposed outcome). Then in Model 2, we estimated the spillover and crossover effects from external stressors to trajectories of marital quality by adding husbands' and wives' external stressors as the fixed predictors into the unconditional growth model.

Now we examined the central research aim. We analyzed three models to respectively test the moderating roles of personal resources (self-esteem), relational resources (spousal support), and social network resources (relationship with parents and parents-in-law) in the spillover and crossover effects from external stressors to the trajectories of marital quality (Models 3/4/5). From Models 2 to 5, we tested whether and which covariates should be controlled for in the analyses. Model comparisons using cross-validation -- the gold standard of model comparison given its consideration on not only how the model fit existing data but also how the model may apply to future unseen data (for details, see Vehtari et al., 2017) -- demonstrated no necessity in including any of covariates we listed in the Measure section.

Results

Preliminary Analyses

We display details for the preliminary analyses in Supplementary Document #4. As a brief summary, all statistically significant bivariate correlations were in expected directions in the descriptive analyses and bivariate correlations analyses.

In *Model 1 (the unconditional growth model)* and for the binary part of husbands' and wives' marital quality (predicting husbands' and wives' likelihood of being in highly satisfied relationships), no effect was found for time, suggesting that the likelihood of being in highly satisfied relationships was relatively stable across time. For the binary part of husbands' and wives' marital quality (predicting the levels of unhappiness and dissatisfaction among those not in highly satisfied relationships), strong evidence (i.e., 95% HDI did not

include 0) was found for the positive effect of time, indicating that the levels of dissatisfaction and unhappiness increased over time.

In *Model 2 (estimating the spillover and crossover effects from external stressors to trajectories of marital quality),* strong evidence (95% HDI did not include 0) for spillover effects was found for both husbands' and wives' binary parts (predicting likelihood of being in highly satisfied relationships) as well as continuous parts (predicting the levels of unhappiness and dissatisfaction among those who were not in highly satisfied relationship). Further, strong evidence (95% HDI did not include 0) for the crossover effect was found for husbands' binary parts only (predicting husbands' likelihood of being in highly satisfied relationships).

Moderating Roles of Personal Resource (Model 3)

Model 3 converged. Fixed effects are Table 1. Moderating effects were found between husbands' external stressors and husbands' self-esteem on wives' marital quality. For two-way interactions, we probed simple slopes between external stressors and marital quality at low and high levels of moderators (*Mean* ± 1 *SD*) throughout this study.

For wives' binary parts (predicting wives' likelihood of being in highly satisfied relationships, Figure 1_A): When husbands reported low self-esteem, husbands' external stressors reduced wives' likelihood of being in highly satisfied relationships. When husbands reported high self-esteem, no associations were found between husbands' external stressors and wives' likelihood of being in highly satisfied relationships.

For the wives' continuous parts (predicting levels of unhappiness and dissatisfaction among wives not in highly satisfied relationships, Figure 1_B): When husbands reported low self-esteem, husbands' higher external stressors related to wives' more unhappiness and dissatisfaction. When husbands reported high self-esteem, no associations were found between husbands' external stressors and wives' level of unhappiness and dissatisfaction.

Moderating Roles of Relational Resource (Model 4)

Model 4 converged. Fixed effects are in Table 2. Moderating roles of spousal support were found for both spouses.

For the husbands' continuous parts (predicting levels of unhappiness and dissatisfaction among husbands not in highly satisfied relationships), we found modest evidence (i.e., 89% HDI did not include 0) for: (a) two-way interaction between husbands' external stressors and husbands' spousal support, and (b) two-way interaction between wives' external stressors and wives' spousal support. In Figure 2_A, when husbands reported low spousal support, husbands' higher external stressors related to themselves' more unhappiness and dissatisfaction. In comparison, when husbands reported high spousal support, no associations were found between husbands' external stressors and themselves' unhappiness and dissatisfaction.

In Figure 2_B, either when wives reported low spousal or high spousal support, we did not obtain enough evidence (i.e., 89% HDI included 0) demonstrating associations between wives' external stressors and husbands' level of unhappiness and dissatisfaction. However, we saw the following: When wives reported low spousal support, wives' higher external stressors seemed to be related to husbands' greater unhappiness and dissatisfaction. When wives reported high spousal support, wives' higher external stressors seemed to be related to husbands' less unhappiness and dissatisfaction.

For the wives' continuous parts (predicting levels of unhappiness and dissatisfaction among wives not in highly satisfied relationships), we found modest evidence (i.e., 89% HDI did not include 0) for the three-way interaction among husbands' external stressors, husbands' spousal support, and time. To interpret the three-way interaction, we probed the over-time trajectories of wives' unhappiness and dissatisfaction at the different combinations of husbands' external stressors and husbands' spousal support.

Per Figure 3_A, when husbands reported low spousal support, wives' unhappiness and dissatisfaction were stable across time regardless of husbands' external stressors. Yet, wives' initial levels of unhappiness and dissatisfaction were lower when husbands reported lower external stressors.

The situation became more complex when husbands reported higher spousal support. In Figure 3_B, wives' unhappiness and dissatisfaction increased over time when husbands reported higher external stressors, but the initial levels of wives' unhappiness and dissatisfaction were consistent regardless of husbands' external stressors.

Moderating Roles of Social Network Resources (Model 5)

Model 5 converged. Fixed effects are in Table 3.

Moderating effects of relationships with parents and parents-in-law were found for husbands' continuous parts and wives' binary parts. For husbands' continuous parts (predicting levels of unhappiness and dissatisfaction among husbands not in highly satisfied relationships), we found modest evidence (i.e., 89% HDI did not include 0) for two-way interaction between husbands' external stressors and husbands' relationships with parents/parents-in-law. In Figure 4, when husbands reported fewer close relationships with parents and parents-in-law, no associations were found between husbands' external stressors and themselves' unhappiness and dissatisfaction. When husbands reported closer relationships with parents and parents-in-law, husbands' higher external stressors related to themselves' more unhappiness and dissatisfaction.

For wives' binary parts (predicting wives' likelihood of being in highly satisfied relationships), we found modest evidence (i.e., 89% HDI did not include 0) for (a) two-way interaction between wives' external stressors and wives' relationships with parents/parents-in-law and (b) two-way interaction between husbands' external stressors and husbands' relationships with parents/parents-in-law. In Figure 5_A, when wives reported fewer close

relationships with parents and parents-in-law, wives' external stressors reduced their own likelihood of being in highly satisfied relationships. When wives reported closer relationships with parents and parents-in-law, no associations were found between wives' external stressors and themselves' likelihood of being in highly satisfied relationships.

However, in Figure 5_B, when husbands reported fewer close relationships with parents and parents-in-law, no associations were found between husbands' external stressors and wives' likelihood of being in highly satisfied relationships. When husbands reported closer relationships with parents and parents-in-law, husbands' external stressors reduced wives' likelihood of being in highly satisfied relationships.

Discussion

Drawing from the stress resistance process, we went beyond the moderating roles of relational resources to examine how personal and social network resources may also buffer associations from external stressors to the trajectories of marital quality. This study was conducted among Chinese heterosexual couples in the first several years of marriage, a still understudied non-Western sample population who has experienced drastic changes in recent several decades in Chinese society. When proposing whether and which resources at personal, relational, and social network levels buffer associations from external stressors to relationship quality among the current sample, we considered not only the social cultural contexts but also each individual, couple, and family's experience that may have been reshaped by the social changes.

Findings that Support Theory

In general, the results support the stress resistance process theory and research in the field of couple relationships --mostly on Western couples-- by further confirming the buffering roles of spousal support, the relational resource (Hobfoll, 1985, 1989; Bodenmann et al., 2016). *As an extension to existing research in the field of couple relationships and*

consistent with the stress resistance process, we found that self-esteem (personal resources) and relationships with parents and parents-in-law (social network resources) also buffer the detrimental effects of external stressors for relational outcomes. Hobfoll (1985, 1989) argued that individuals use all resources that are available to them when handling external stressors. Yet limited attention has been paid to personal and social network resources in the field of couple relationships, although literature on personal well-being has established the buffering roles of personal and social network resources (e.g., in the associations from stressors to depression in Anderson et al., 2015 and to job satisfaction in Callea et al., 2017).

By demonstrating the salient yet previously underestimated roles of resources other than those at the relational level, the present study highlights two additional patterns of couple relationships. First, whereas two partners need to be mutually supportive of one another (Bodenmann et al., 2016), the personal-level constructs are also crucial for obtaining desirable relational outcomes, including high self-esteem that typically indicates effective personal coping strategies (Dumont & Provost, 1999) and emotion regulation in stressful conditions (Mäkikangas & Kinnunen, 2003). Second, each couple is embedded in a social network, and the two partners are not facing stressors alone (Chong et al., 2017). Specific to parents and parents-in-law as part of the social network, these individuals often regard couples' external stressors as manageable and may provide especially frequent support and effective solution (Bucx et al., 2012). Such existing research supports what we found in the current study: Wives' relationships with parents and parents-in-law also buffer the detrimental effects of external stressors.

Findings Explained by Social Cultural Background and Historical Periods

Findings explained by social cultural background. In addition to the above results that support existing research and theory, several nuanced findings emerged. For the first three nuanced findings, speculative explanations can be proposed based on social cultural

context in China. In Chinese marriage, husbands' provider abilities (e.g., high income, successful career, being confident and ambitious, problem solving skills) and wives' housekeeper roles (e.g., assisting with husbands' career, handing housework, maintaining relationships with kin) are highly emphasized, even in the modern society and especially in comparison to Western couples (Ji et al., 2017). Whether individuals are equipped with resources to handle external stressors (e.g., those related to issues such as housing, career, or finances) should be an indicator for provider ability, which are valued more for husbands than for wives. This may explain *the first nuanced finding*: More moderating effects were found for husbands' resources than for wives' resources (i.e., 6 for husbands versus 2 for wives) in the associations from external stressors to relational outcomes.

The *second nuanced finding* is specific to self-esteem: Husbands' (not wives') self-esteem buffers the detrimental effects of external stressors. The *third nuanced finding* is specific to relationships with parents and parents-in-law: Wives' relationships with parents and parents-in-law *attenuate* the detrimental effects of external stressors, yet husbands' relationships with parents and parents-in-law *exacerbate* the detrimental effects of external stressors. For the explanation, we considered these two nuanced findings together and returned to the emphasis on husbands' provider abilities and wives' housekeeper roles in Chinese culture.

Specifically, self-esteem suggests the confidence in individuals' own values and the capabilities to enact proper coping strategies (Dumont & Provost, 1999; Erol, & Orth, 2013), and such confidence and capabilities may then indicate the high provider abilities that are valued for husbands (not for wives) in Chinese marriages. On the contrary, maintaining relationships with parents and parents-in-law falls into the emphasis of women's housekeeper roles (Chen et al., 2009). For husbands, relying on relationships with parents and parents-in-law as resources in stressful conditions may suggest the inability to solve problems and the

failure to be a provider in the family (Liu, 2019).

Finding explained by historical periods. For the *fourth nuanced finding* specific to spousal support. We found relatively complex patterns here: (1) Husbands' relational resources buffered the detrimental effects from husbands' external stressors to wives' initial levels of marital quality; (2) Husbands' relational resources also strengthened associations from husbands' external stressors to wives' over-time increases in dissatisfaction and unhappiness. Taken together, we found opposite roles of husbands' relational resources for their wives' marital quality: *beneficial in the short term but detrimental in the long term*.

Speculative explanations can be proposed based on the historical period of contemporary China. Couples' living experiences in contemporary China have been complicated by the co-existence of the long-lasting traditions and recent, drastic transitions. With the Chinese government investing efforts to challenge traditional gender norms since 1949, Chinese women have actively participated in labor and enacted the provider role as men did (Ji et al., 2017). Meanwhile, it still expected for women to be the main housekeepers (Ji et al., 2017). As the consequence, wives in contemporary China (including those in the present study) often shoulder multiple burdens such as similar levels of external stressors to husbands (paired $t = -.955$, $p > .10$ in the present study), most of housework, and expectations to help their husbands (Ji et al., 2017; Li et al., 2020). In the short term, support provided by wives can prevent undesired situations such that husbands brought unresolved external stressors home and expressed negative emotion in their marital lives (as indicated in studies related to how external stressors crossover; Neff & Karney, 2017). However, in the long term, providing support for husbands may engender feelings of exhaustion and deprivation among wives given the multiple burdens, which may persist and accumulate into wives' marital dissatisfaction and distress (Maier & Priest, 2016).

Limitations and Future Research Directions

Several limitations and future research directions are noted. First, couples in the present study lived in economically developed Chinese urban areas and had relatively high levels of education and income. Also, no same-sex couples were included in the larger project, and researchers in the larger project did not ask for gender identity, disability status, and racial/ethnic information either. To this end, generalizing our findings to the other groups (e.g., Chinese couples with lower income and less education) should be made with caution, and future studies with more diverse samples are still pressing.

Second, it should be noted our self-developed measure of external stressors includes both discrete events (e.g., losing job) and stressors that are relatively frequent in lives (e.g., financial difficulties). On one hand, including all these items are in line with the conceptualization of external stressors (i.e., stressors that originated outside of couple interactions; Randall & Bodenmann, 2017) and fully depict the potential events that each couple may encounter. On the other hand, some researchers emphasized frequent stressors that may happen in daily lives more than discrete events, largely because these frequent stressors seem more related to couple relationship than the discrete events (Randall & Bodenmann, 2017). In future studies, researchers may consider distinguishing discrete events and stressors that are relatively frequent in lives to examine how they work together when shaping couple relationship well-being.

Third, when studying the moderating roles of relational and social network resources, we combined all relevant aspects together and created overall constructs. Yet, different findings may emerge when unpacking the overall constructs and examining the unique roles of each aspect of relational and social network resources (see Supplementary Documents #2 and #3 for details). Such nuances are worthy of further examination.

Fourth, evidence for moderating effects of resources were mostly demonstrated by 89% HDI and therefore modest. As a statistical consideration, we examined two-way (i.e.,

external stressors × resources) and even three-way (i.e., external stressors × resources × time) interactions, which are typically small in effect sizes and difficult to identify (Marsh et al., 2013). As a theoretical consideration, we examined how external stressors and resources at baseline interacted in the associations with marital quality across three waves. Yet, external stressors and resources change across time (Hobfoll et al., 2018). Future researchers may assess external stressors and resources at different time points and then test whether the over-time changes in external stressors and resources are more predictive for marital quality than their initial levels (for similar analytic strategies, see Li et al., 2019a, 2019b).

Fifth, it was the first time using hurdle-gamma regression in the field of couple relationships. Yet the novelty and exploratory nature of the analyses does not mean the lack of theoretical implications. For example, the estimation of the unconditional growth model is consistent with prior research identifying variability in the developmental trajectories in marital quality across time (Williamson & Lavner, 2020). Those who started with higher happiness and satisfaction experienced few changes across time, whereas those who started with lower happiness and satisfaction became increasingly distressed over time. More importantly, the different predictive effects for the binary part (predicting the likelihood of being in highly satisfied relationships) and continuous part (predicting levels of dissatisfaction and unhappiness among those who were not in highly satisfied relationships) highlight another possibility for future research and practice: depending on the level of each partner's relational well-being, different theoretical models and practical avenues should be taken to keep the desirable outcomes or to prohibit further increase in distress.

Implications and Conclusion

As mentioned above, couples in the current study are of relatively high socioeconomic status, indicating that they may experience fewer external stressors and possess more resources than the boarder population in China (Karney & Bradbury, 2020).

Further, as each social cultural context has unique norms and beliefs, a sample of Chinese couples cannot represent all other underrepresented populations. Nevertheless, our results should still inform researchers and practitioners in and outside of China in the following ways.

First, when working with couples in stressful conditions, our findings suggest the necessity of considering and promoting resources at all ecological levels. For example, while working on promoting spousal support, relationship therapists may refer clients to individual counseling to handle issues of low self-esteem. Further, it may be helpful to conduct extended family therapy (Horsley, 1997) and involve parents and parents-in-law in marital therapy to facilitate how couples are dealing with stressors. With self-esteem functioning as a more beneficial resource in individualistic cultures (e.g., Europe and North American) than collectivistic cultures (e.g., China; Steel et al., 2018), couples in the oft studied Western societies may also benefit from combining individual counseling promoting self-esteem with couple therapy. Further, given the shared emphasis on the interdependence between adult children and their parents and parents-in-law, the extended family therapy may be helpful for couples in other countries (e.g., Korea and Indonesia; Kim et al., 2015; Nauck & Suckow, 2006).

Second, as we found that personal and social network resources work differently for husbands and wives, we recommend researchers and practitioners considering the gendered expectations for husbands' and wives' roles in each society. Also, practitioners can (a) help partners reflect why specific resources are effective or not for male and female, and (b) then challenge the ubiquity of the gendered expectations for each partner (Few-Demo & Allen, 2020). As the intended outcome, husbands and wives can overcome constraints along with gendered expectations and maximize the benefits of all available resources. Such intended outcomes may be generalized outside of China to other underrepresented social cultural

contexts in which husbands are expected to be providers whereas wives are expected to be housekeepers (e.g., Mexican American households; Hengstebeck et al., 2016).

Third, researchers and practitioners should note that spousal support, a crucial relational resource, may be burdensome for support providers who shoulder multiple responsibilities inside and outside of family lives (e.g., Chinese wives who simultaneously handle external stressors and enact housekeeper roles). Efforts are needed to determine potential solutions that promote spousal support for both partners without overwhelming either of them (e.g., facilitating men's involvement in housework and relieving women's burdens via premarital education and policy changing; Lachance-Grzela & Bouchard, 2010). Notably, with women's multiple burdens escalating into a global issue during the COVID-19 pandemic (McLaren et al., 2020), such efforts are in urgent need inside and outside China.

In summary, our findings highlight that when helping couples cope with stressors, it is helpful to include available resources at multiple ecological levels (relational, personal, social network) as well as to consider whether and how social cultural backgrounds affect the effectiveness of a specific resource.

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Table 1 Fixed effects (predictors not centered) in the model testing the moderating roles of ***self-esteem*** (*N* = 268 couples)

	Husbands			Wives		
	Posterior mean (exponentiated)	95%HDI	89% HDI	Posterior mean (exponentiated)	95%HDI	89% HDI
Binary part (predicting likelihood of being in highly satisfied relationships)						
Intercept	-5.72 (.00)	[-24.51, 12.14]	[-21.48, 8.32]	9.15 (9414.44)	[-18.88, 4.28]	[-15.58, 32.01]
Time	-.17 (.84)	[-.42, .08]	[-.38, .04]	-.23 (.79)	[-.52, .07]	[-.46, .02]
Own external stressors	-1.42 (.24)	[-9.98, 6.03]	[-7.85, 4.96]	-.38 (.68)	[-15.69, 13.67]	[-11.84, 12.18]
Partner's external stressors	2.05 (7.77)	[-6.70, 1.64]	[-4.83, 9.55]	-13.55 (.00)	[-29.25, -.35]	[-25.35, -2.04]
Own self-esteem	.37 (1.45)	[-3.14, 3.69]	[-2.35, 3.12]	2.84 (17.12)	[-3.13, 8.72]	[-2.12, 7.59]
Partner's self-esteem	2.13 (8.41)	[-1.50, 5.87]	[-.85, 5.24]	-4.64 (.01)	[-1.81, .74]	[-9.44, -.08]
Own external stressors × own self-esteem	-.14 (.87)	[-2.41, 2.38]	[-2.00, 1.81]	-.72 (.49)	[-4.73, 3.51]	[-4.28, 2.56]
Partner's external stressors × partner's self-esteem	-1.03 (.36)	[-3.52, 1.52]	[-3.10, 1.05]	3.64 (38.09)	[-.19, 8.12]	[.33, 7.03]
Continuous part (predicting levels of unhappiness and dissatisfaction among those not in highly satisfied relationships)						
Intercept	.57 (1.77)	[-1.32, 11.10]	[-8.34, 8.82]	-1.43 (.24)	[-21.82, .48]	[-18.83, -.92]
Time	.84 (2.32)	[-3.92, 5.64]	[-2.76, 4.93]	3.87 (47.94)	[-.81, 8.68]	[-.12, 7.50]
Own external stressors	-2.54 (.08)	[-7.52, 2.59]	[-6.52, 1.66]	2.06 (7.85)	[-2.79, 7.19]	[-1.81, 6.32]
Partner's external stressors	2.53 (12.55)	[-2.36, 7.49]	[-1.56, 6.59]	6.54 (692.29)	[1.41, 11.84]	[2.48, 1.90]
Own self-esteem	-1.40 (.25)	[-3.64, .90]	[-3.25, .41]	-.02 (.98)	[-2.27, 2.32]	[-1.83, 1.84]
Partner's self-esteem	.84 (2.32)	[-1.37, 3.07]	[-1.14, 2.50]	2.69 (14.73)	[.42, 5.08]	[.75, 4.53]
Own external stressors × time	.83 (2.29)	[-1.48, 3.22]	[-1.13, 2.71]	-1.28 (.28)	[-3.40, .83]	[-3.01, .41]
Partner's external stressors × time	-1.02 (.36)	[-3.21, 1.18]	[-2.68, .82]	-1.44 (.24)	[-3.70, .81]	[-3.15, .53]
Own external stressors × own self-esteem	1.07 (2.92)	[-.48, 2.59]	[-.21, 2.26]	-.42 (.66)	[-1.96, 1.04]	[-1.59, .81]
Partner's external stressors × partner's self-esteem	-.86 (.42)	[-2.32, .58]	[-2.07, .34]	-1.91 (.15)	[-3.50, -.37]	[-3.19, -.64]
Own self-esteem × time	.25 (1.28)	[-.77, 1.30]	[-.62, 1.07]	-.60 (.55)	[-1.58, .37]	[-1.43, .14]
Partner's self-esteem × time	-.52 (.59)	[-1.50, .48]	[-1.28, .30]	-.60 (.55)	[-1.63, .41]	[-1.42, .22]
Own external stressors × own self-esteem × time	-.26 (.77)	[-.97, .44]	[-.82, .34]	.39 (1.48)	[-.25, 1.02]	[-.10, .93]
Partner's external stressors × partner's self-esteem × time	.35 (1.42)	[-.30, 1.00]	[-.18, .85]	.49 (1.63)	[-.18, 1.17]	[-.08, 1.03]

Note. For the continuous part, higher scores indicated higher unhappiness and dissatisfaction.

Table 2 Fixed effects (predictors not centered) in the model testing the moderating roles of ***spousal support*** (*N* = 268 couples)

	Husbands			Wives		
	Posterior mean (exponentiated)	95%HDI	89% HDI	Posterior mean (exponentiated)	95%HDI	89% HDI
Binary part (predicting likelihood of being in highly satisfied relationships)						
Intercept	3.88 (48.42)	[-13.09, 2.45]	[-9.45, 17.88]	4.65 (104.58)	[-17.99, 27.20]	[-13.80, 22.68]
Time	-.17 (.84)	[-.44, .08]	[-.39, .04]	-.22 (.80)	[-.52, .07]	[-.45, .02]
Own external stressors	-4.36 (.01)	[-12.22, 3.17]	[-1.42, 2.02]	-3.00 (.05)	[-16.31, 1.13]	[-14.00, 7.26]
Partner's external stressors	-3.18 (.04)	[-13.16, 6.96]	[-11.40, 4.89]	-7.03 (.00)	[-18.58, 4.31]	[-16.19, 2.04]
Own spousal support	-.86 (.42)	[-4.10, 2.26]	[-3.44, 1.68]	.76 (2.14)	[-4.66, 6.33]	[-3.70, 5.19]
Partner's spousal support	.58 (1.79)	[-3.49, 4.85]	[-2.92, 3.85]	-1.05 (.35)	[-5.66, 3.45]	[-4.84, 2.50]
Own external stressors × own spousal support	.78 (2.18)	[-1.57, 3.18]	[-1.19, 2.63]	-.03 (.97)	[-4.11, 4.00]	[-3.32, 3.23]
Partner's external stressors × partner's spousal support	.49 (1.63)	[-2.63, 3.48]	[-1.90, 3.02]	1.77 (5.87)	[-1.60, 5.21]	[-.82, 4.59]
Continuous part (predicting levels of unhappiness and dissatisfaction among those not in highly satisfied relationships)						
Intercept	-1.45 (.00)	[-19.45, -1.11]	[-18.46, -3.26]	-6.57 (.00)	[-15.30, 2.40]	[-14.42, .16]
Time	3.63 (37.71)	[-.47, 7.65]	[.24, 6.82]	3.50 (33.12)	[-.43, 7.28]	[.35, 6.60]
Own external stressors	4.37 (79.04)	[.03, 8.84]	[.60, 7.72]	3.08 (21.76)	[-1.66, 7.79]	[-.83, 6.90]
Partner's external stressors	4.17 (64.72)	[-1.40, 9.31]	[-.25, 8.48]	3.32 (27.66)	[-1.11, 7.66]	[-.32, 6.73]
Own spousal support	1.34 (3.82)	[-.55, 3.29]	[-.27, 2.85]	1.12 (3.06)	[-.99, 3.19]	[-.54, 2.86]
Partner's spousal support	1.58 (4.85)	[-.86, 3.88]	[-.33, 3.51]	.39 (1.48)	[-1.53, 2.32]	[-1.13, 2.03]
Own external stressors × time	-.95 (.39)	[-2.87, .91]	[-2.51, .64]	-1.16 (.31)	[-3.24, .87]	[-2.78, .55]
Partner's external stressors × time	-1.47 (.23)	[-3.71, .87]	[-3.44, .37]	-1.45 (.23)	[-3.37, .47]	[-2.91, .13]
Own external stressors × own spousal support	-1.14 (.32)	[-2.53, .25]	[-2.24, -.00]	-.70 (.50)	[-2.19, .80]	[-1.95, .48]
Partner's external stressors × partner's spousal support	-1.37 (.25)	[-3.02, .37]	[-2.81, -.06]	-.99 (.37)	[-2.38, .41]	[-2.08, .15]
Own spousal support × time	-.45 (.64)	[-1.29, .38]	[-1.13, .27]	-.64 (.53)	[-1.55, .27]	[-1.40, .09]
Partner's spousal support × time	-.75 (.47)	[-1.76, .29]	[-1.57, .12]	-.50 (.61)	[-1.36, .34]	[-1.17, .21]
Own external stressors × own spousal support × time	.32 (1.38)	[-.27, .92]	[-.20, .79]	.37 (1.45)	[-.27, 1.02]	[-.16, .90]
Partner's external stressors × partner's spousal support × time	.52 (1.68)	[-.23, 1.22]	[-.10, 1.11]	.50 (1.65)	[-.09, 1.11]	[.03, 1.00]

Note. For the continuous part, higher scores indicated higher unhappiness and dissatisfaction.

Table 3 Fixed effects (predictors not centered) in the simplified model testing the moderating roles of ***relationship with parents and parents-in-law (PILs)*** (*N* = 268 couples)

	Husbands			Wives		
	Posterior mean (exponentiated)	95%HDI	89% HDI	Posterior mean (exponentiated)	95%HDI	89% HDI
Binary part (predicting likelihood of being in highly satisfied relationships)						
Intercept	-5.61 (.00)	[-18.52, 7.60]	[-17.01, 4.12]	4.25 (70.11)	[-16.25, 25.59]	[-11.79, 22.81]
Time	-.17 (.84)	[-.42, .09]	[-.39, .03]	-.22 (.80)	[-.52, .08]	[-.47, .01]
Own external stressors	1.48 (4.39)	[-4.83, 7.46]	[-3.20, 6.66]	-14.69 (.00)	[-29.54, -1.22]	[-26.22, -3.22]
Partner's external stressors	-.04 (.96)	[-7.57, 7.16]	[-6.12, 5.87]	6.05 (424.11)	[-1.44, 13.77]	[.19, 12.57]
Own relationship with parents and PILs	.28 (1.32)	[-.26, .81]	[-.16, .71]	-.53 (.59)	[-1.67, .57]	[-1.47, .35]
Partner's relationship with parents and PILs	.24 (1.27)	[-.43, .90]	[-.28, .80]	.48 (1.62)	[-.19, 1.18]	[-.10, 1.03]
Own external stressors × own relationship with parents and PILs	-.21 (.81)	[-.59, .19]	[-.52, .11]	.71 (2.03)	[-.09, 1.56]	[.03, 1.37]
Partner's external stressors × partner's relationship with parents and PILs	-.09 (.91)	[-.53, .37]	[-.46, .28]	-.44 (.64)	[-.93, .03]	[-.83, -.05]
Continuous part (predicting levels of unhappiness and dissatisfaction among those not in highly satisfied relationships)						
Intercept	2.06 (7.85)	[-2.19, 6.31]	[-1.54, 5.40]	.2 (1.22)	[-4.41, 4.73]	[-3.57, 3.72]
Time	-.18 (.84)	[-.82, .44]	[-.71, .32]	-.04 (.96)	[-.65, .58]	[-.52, .49]
Own external stressors	-1.1 (.33)	[-3.23, 1.02]	[-2.88, .56]	1.19 (3.29)	[-1.27, 3.78]	[-.90, 3.12]
Partner's external stressors	-.07 (.93)	[-2.44, 2.36]	[-2.01, 1.94]	-.7 (.50)	[-2.84, 1.37]	[-2.35, 1.05]
Own relationship with parents and parents-in-law	-.19 (.83)	[-.38, .00]	[-.34, -.04]	-.04 (.96)	[-.28, .19]	[-.24, .15]
Partner's relationship with parents and parents-in-law	-.02 (.98)	[-.24, .20]	[-.21, .15]	-.07 (.93)	[-.27, .12]	[-.22, .09]
Own external stressors × time	.07 (1.07)	[-.26, .40]	[-.21, .33]	.04 (1.04)	[-.28, .36]	[-.22, .30]
Partner's external stressors × time	.15 (1.16)	[-.18, .47]	[-.12, .41]	.08 (1.08)	[-.23, .41]	[-.19, .33]
Own external stressors × own relationship with parents and PILs	.12 (1.13)	[-.01, .25]	[.01, .22]	-.03 (.97)	[-.19, .12]	[-.16, .10]
Partner's external stressors × partner's relationship with parents and PILs	-.01 (.99)	[-.16, .14]	[-.14, .10]	.06 (1.06)	[-.08, .20]	[-.05, .17]

Note. For the continuous part, higher scores indicated higher unhappiness and dissatisfaction. According to the model convergence information and model comparisons using cross-validation, we omitted the estimation for the following fixed predictors in the continuous part of the model: Own relationship with parents and parents-in-law × Time, Partner's relationship with parents and parents-in-law × Time, Own external stressors × Own relationship with parents and parents-in-law × Time, and Partner's external stressors × Partner's relationship with parents and parents-in-law × Time.

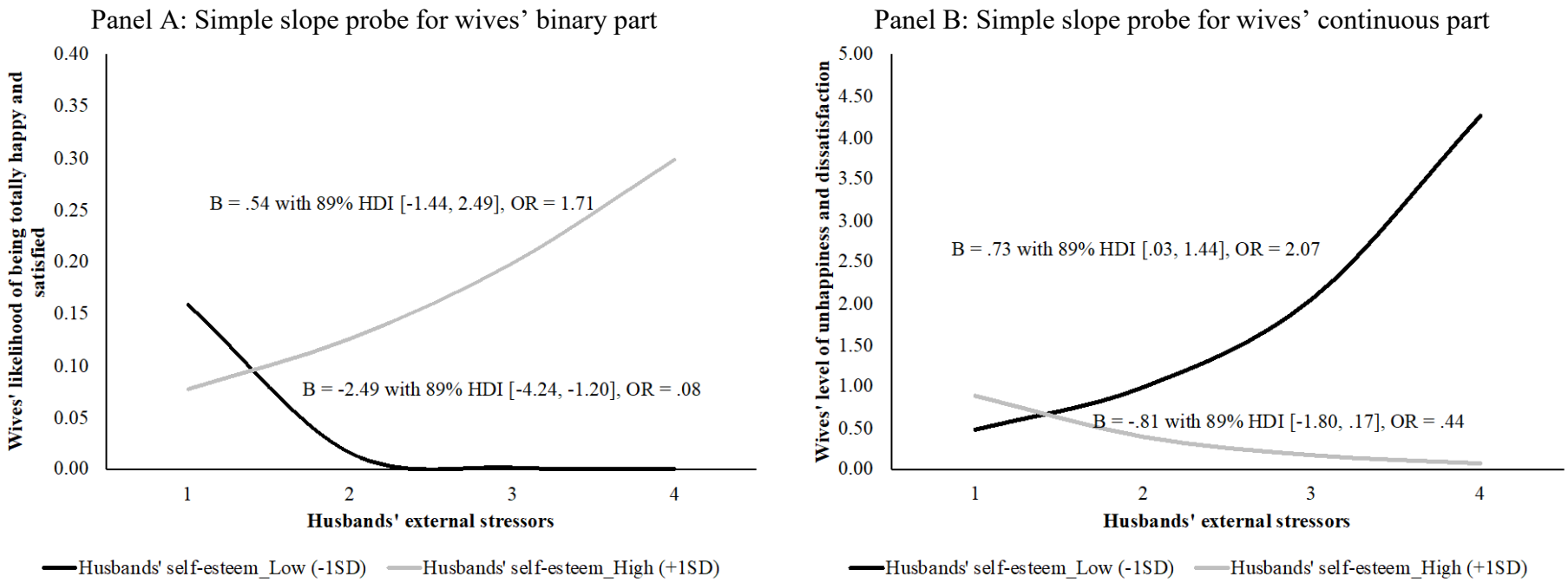
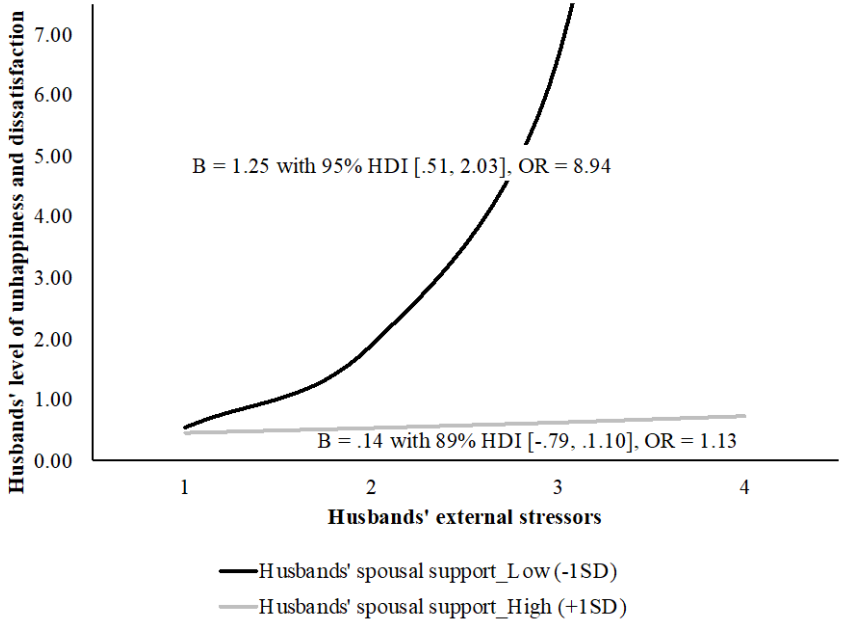


Figure 1 The simple slope probe for moderating roles for self-esteem for the binary and continuous parts of wives' marital quality ($N = 268$ couples)

OR = odds ratio. For the simplification for presentation, we only presented the 89% HDI for the simple slope probed at low (-1 SD) and high (+1 SD) levels of moderators. When 0 was included in 89% HDI, we concluded that modest evidence can be found for a notable simple slope at high or low levels moderators. Otherwise, we concluded the simple slope at high or low levels of moderators was not different from 0.

Panel A: Simple slope probe moderating effects on stressors spillover



Panel B: Simple slope probe moderating effects on stressors crossover

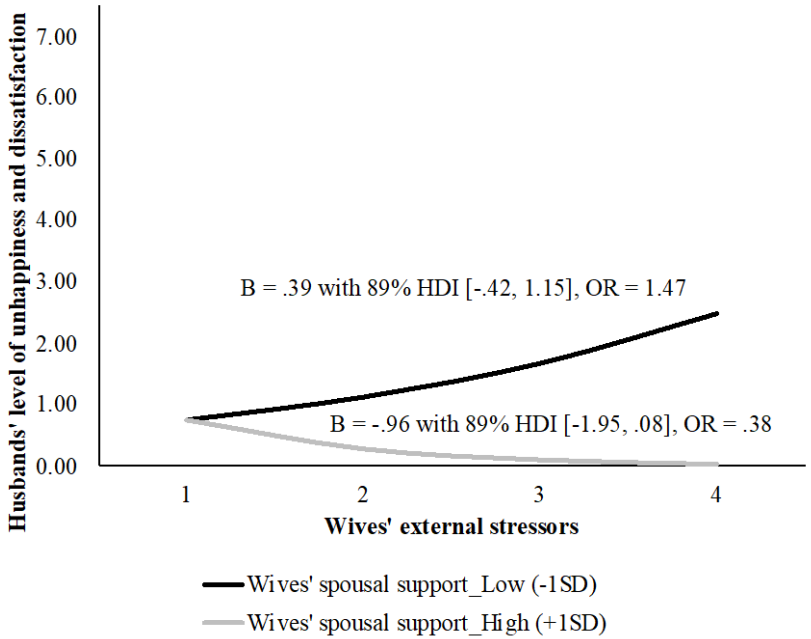


Figure 2 The simple slope probe for the moderating roles for spousal support for the continuous part of husbands' marital quality (N = 268 couples)

OR = odds ratio. For the simplification for presentation, we only presented the 89% HDI for the simple slope probed at low (-1 SD) and high (+1 SD) levels of moderators. When 0 was included in 89% HDI, we concluded that modest evidence can be found for a notable simple slope at high or low levels moderators. Otherwise, we concluded the simple slope at high or low levels of moderators was not different from 0.

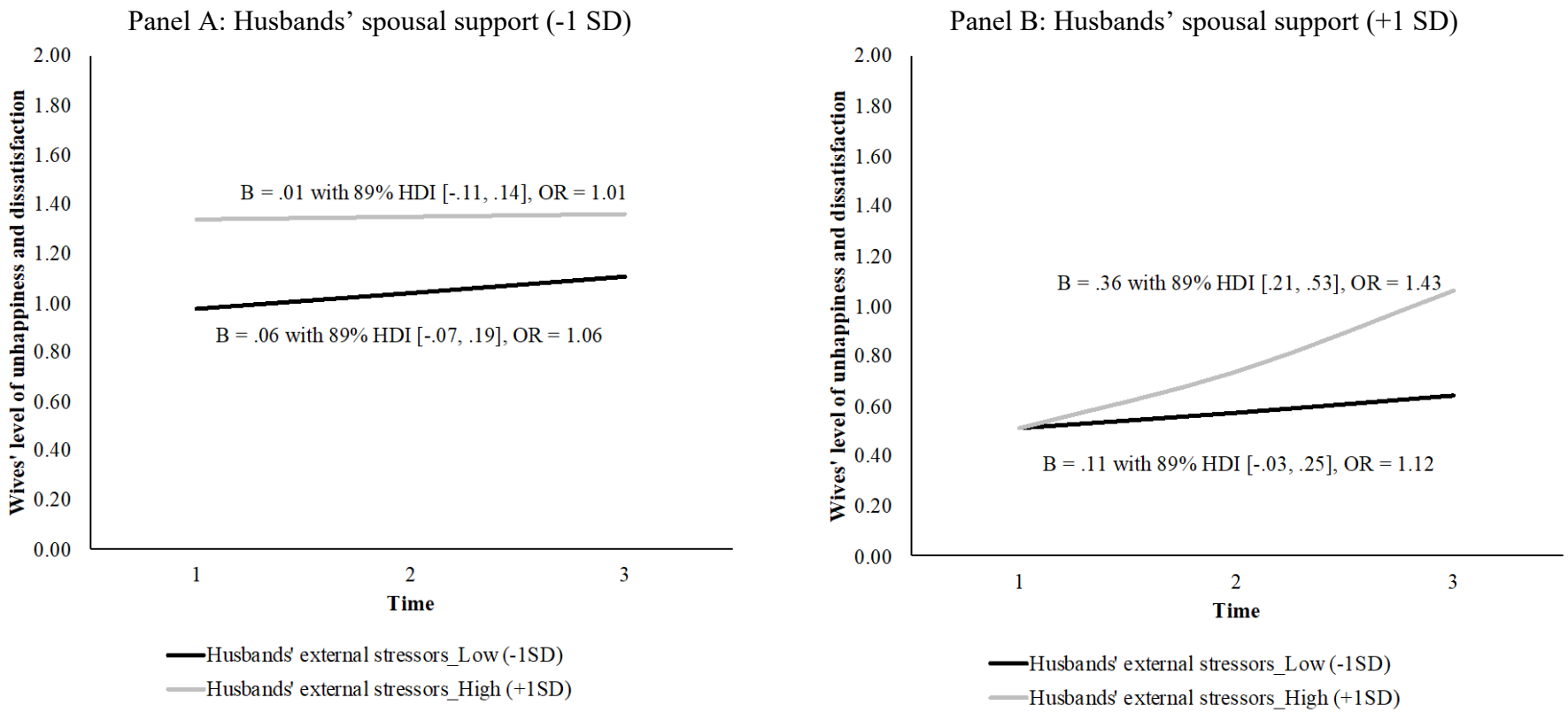


Figure 3 The simple slope probe for the moderating roles for spousal support for the continuous part of wives' marital quality 1 ($N = 268$ couples)

OR = odds ratio. For the simplification in presentation, we only presented the 89% HDI for the over-time development across time given specific combination of low (-1 SD)/high (+1 SD) levels of external stressors and spousal support. When 0 was included in 89% HDI, we concluded that modest evidence can be for an over-time increases/decreases in wives' levels of unhappiness and dissatisfaction. Otherwise, we concluded that wives' levels of unhappiness and dissatisfaction were relatively stable across time.

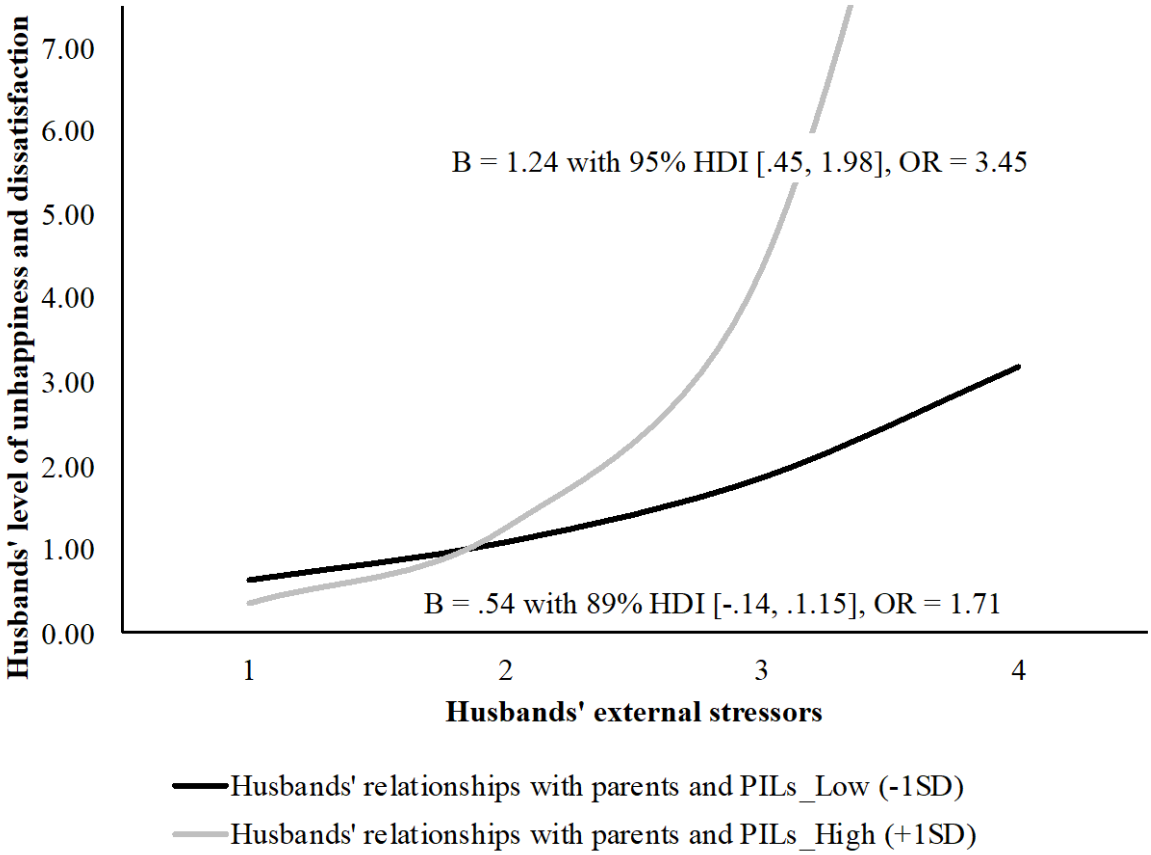
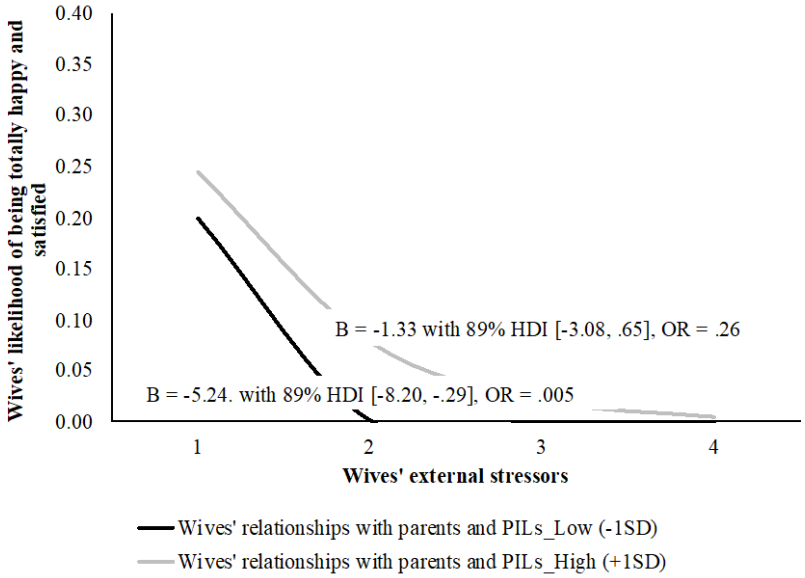


Figure 4 The simple slope probe for the moderating roles for relationships with parents and parents-in-law on continuous part of husbands' marital quality (*N* = 268 couples)
PILs = parents-in-law. OR = odds ratio. For the simplification for presentation, we only presented the 89% HDI for the simple slope probed at low (-1 SD) and high (+1 SD) levels of moderators. When 0 was included in 89% HDI, we concluded that modest evidence can be found for a notable simple slope at high or low levels moderators. Otherwise, we concluded the simple slope at high or low levels of moderators was not different from 0.

Panel A: Simple slope probe moderating effects on stressors spillover



Panel B: Simple slope probe moderating effects on stressors crossover

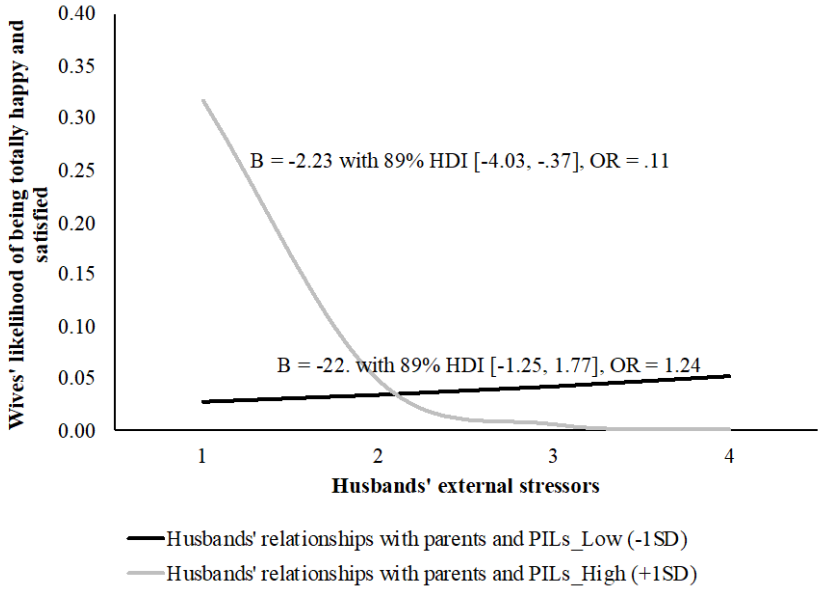


Figure 5 The simple slope probe for the moderating roles for relationships with parents and parents-in-law for the binary part of wives' marital quality (N = 268 couples)

PILs = parents-in-law. OR = odds ratio. For the simplification for presentation, we only presented the 89% HDI for the simple slope probed at low (-1 SD) and high (+1 SD) levels of moderators. When 0 was included in 89% HDI, we concluded that modest evidence can be found for a notable simple slope at high or low levels moderators. Otherwise, we concluded the simple slope at high or low levels of moderators was not different from 0.