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Protective processes underlying the links between marital quality and physical health

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Although the links between marital quality and physical health are now well established, the psychological processes through which marriage impacts health remain unclear. Additionally, prior research on the links between marriage and health has focused mainly on how negative aspects of relationships (e.g., conflict, hostility) can be damaging to one's physical health. In this article, we describe the strength and strain model of marital quality and health, which provides a roadmap for studying protective factors underlying marriage-health links. We home in one relationship process — partner responsiveness — and one broad class of psychological mechanisms — affective processes — to illustrate core aspects of the model. Our review suggests that future research will profit from a greater integration of theory from the social psychology of close relationships into studies of relationships and health.

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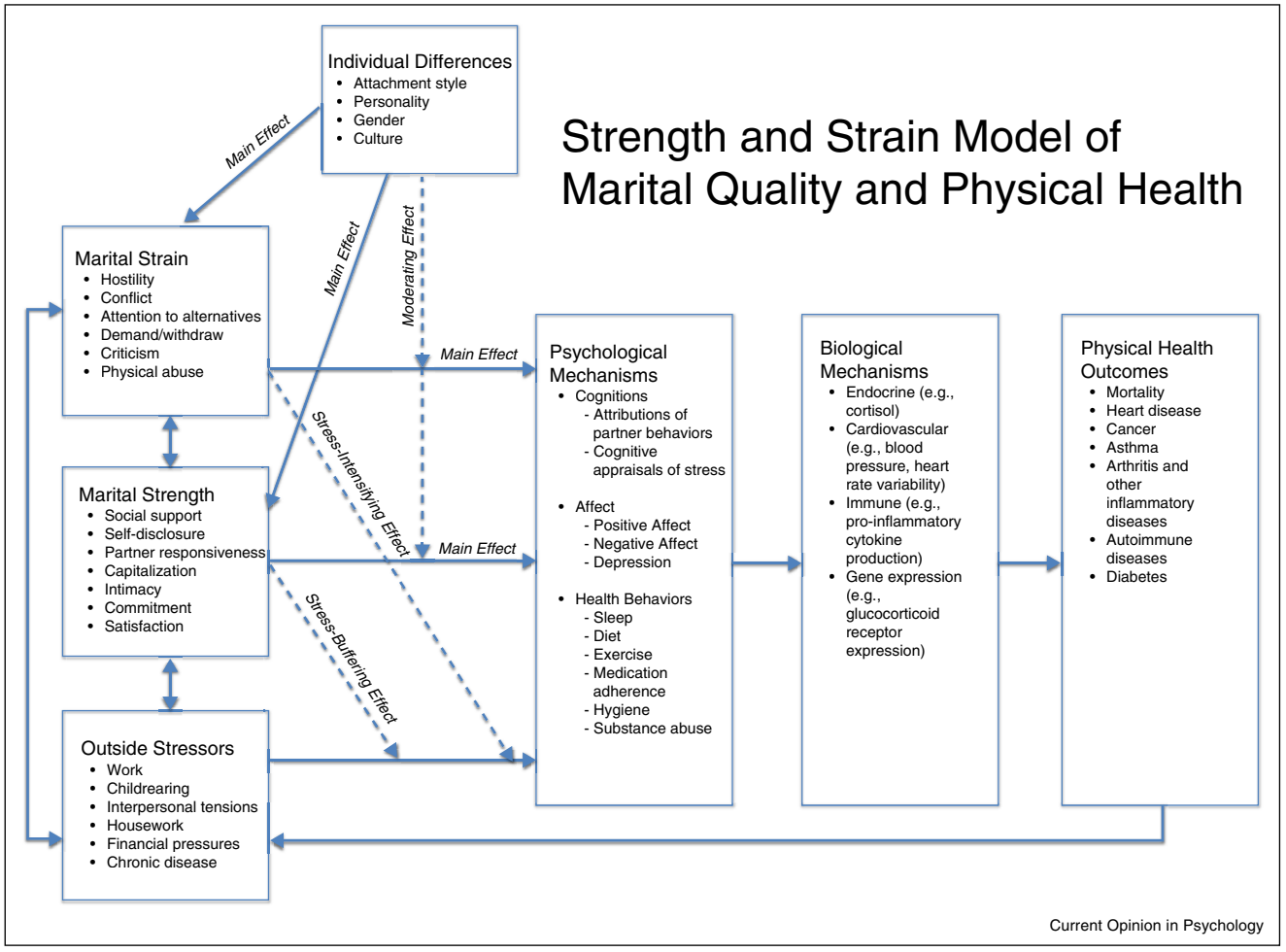
For many, marriage is the most important adult relationship that they will enter in their lifetimes. A troubled marriage leads to pain and heartache, whereas a happy marriage is one of the strongest predictors of personal well-being [1]. Increasingly, people are asking a lot from their marriages, expecting spouses to satisfy their personal psychological needs (e.g., self-esteem needs) more than any other time in history [2]. It thus may come as no surprise that the quality of people's marriages is consistently linked to physical health and longevity. Support for this comes from a recent meta-analysis showing that people in higher quality marriages have better physical health and lower levels of mortality [3••]. However, what could *not* be determined from that meta-analysis was notable. For instance, only a handful of studies separated out effects of positive marital characteristics (e.g., responsiveness, intimacy) from negative characteristics (e.g., conflict, hostility), and almost none of the studies examined psychological moderators (e.g., personality, attachment style) or mediators (e.g., cognitions, affect). So, while the question of whether or not marital quality is linked to health has been answered, a number of new questions have taken its place. In this article, we describe our strength and strain model of marital quality and health and present a brief review of some of the exciting new work in this area, with an emphasis on psychological processes that may confer health protection in the context of marriage.

A roadmap for answering the question of how marital quality impacts physical health may be found in Figure 1. This theoretical framework — the strength and strain model [originally described in 4 but refined here] — has guided our work in this area. In this model, *marital strengths* — such as partner responsiveness — have salutary effects on health, above and beyond the deleterious effects of *marital strains*, marked by conflict, hostility, and related processes. Further, this model describes how marital strengths can help buffer the effects of outside stressors on health and health-related biology — for example, how self-disclosure can lessen the impact of work-family spillover on stress hormone (i.e., cortisol) production [5] — and conversely, how martial strain can exacerbate the effects of outside stressors on health. The model also includes potential moderators — such as attachment style, personality, and gender — of the effects of marital processes on health. Ultimately, marital strengths and strains are hypothesized to affect one's health via cognitive and affective processes, health behaviors such as sleep, diet and exercise, and biological mechanisms such as cortisol production and inflammation [for excellent reviews of the biological underpinnings of the links between social relationships and health, see 6•, in this issue, and 7••].

An important departure of the strength and strain model from prior models of marital functioning and health [e.g., 8,9] is its focus on protective factors (i.e., marital strengths). The social psychology of close relationships has made great advances in identifying protective relationship factors and their links to well-being [10,11]; our model is strongly influenced by such work. We prefer the term 'strength' to the often-used 'support' so as to capture the range of positive processes in relationships (e.g., intimacy, capitalization, support) that can potentially

Figure 1



Theoretical model illustrating how marital quality influences physical health via psychological and biological pathways and via its moderating influence on the effects of outside stressors (either stress-intensifying or stress-buffering). Also included in the model are individual difference factors, which can moderate the health effects of relationship processes or, alternatively, can directly impact relationship processes (main effects).

impact health and well-being, beyond just social support. As reported in our recent meta-analysis [3••], very few studies have tested the affects of marital strengths on physical health and even fewer have tested potential psychological mechanisms that might explain these effects. Below, we provide a concise overview of recent advances in our understanding of the links between marital quality and health, homing in on one strength — partner responsiveness — and one class of psychological mechanisms — affective processes — to illustrate key aspects of the strength and strain model.

Partner responsiveness

Relationship scientists have identified responsiveness as a core protective process that leads to satisfying and successful relationships [12]. Responsiveness is the process through which partners are attuned and attentive to each other's needs and goals and is comprised of three key components: (1) understanding, marked by a comprehension of the partner's core self (i.e., really 'getting' where she/he is coming from), (2) validation, or valuing the partner's view of the self, and (3) caring, marked by an expression of warmth and concern for the partner. Responsiveness often occurs in the context of self-disclosure [13•], but can also occur, for example, when couple members participate in an activity together, are discussing of an area of conflict or one's hopes for the future, or are planning a future event [12]. When this process goes well, a person's responsive behaviors are perceived as such by the other partner, and it is this perception of responsiveness that is believed to be crucial to the many benefits of responsiveness.

A good deal of responsiveness research has shown robust links to relationship well-being, with responsive interactions fostering intimacy in couples [14], improved

interactions between leaders and subordinates [15], and between physicians and their patients [16]. Responsiveness is linked to greater personal well-being as well, including greater emotional well-being among cancer patients [17], increased ability to integrate negative experiences into one's self-concept [18], and greater personal thriving [19]. Because it shares common elements with many important relationship constructs — providing core validation of the self, and leading to feelings of warmth, acceptance, belonging, and trust — it has been argued that partner responsiveness is an organizing principle in the study of relationships [20]. We argue that responsiveness also has potential to be an organizing construct in the study of links between close relationships and health.

Early in life, responsiveness from attachment figures facilitates 'tuning and pruning' of biological stress response systems, leading to long-term health benefits via improved stress regulation [21]. Empirical evidence for this idea comes from studies of child rearing, which have shown links between greater maternal responsiveness and better functioning of the hypothalamic–pituitary–adrenal (HPA) axis, which produces the stress hormone cortisol [22]. In a recent study, our research group tested whether fine-tuning of the HPA axis by responsive close others might extend into adulthood. In a large sample of married and cohabitating adults, we showed that greater perceived partner responsiveness predicted steeper ('healthier') diurnal cortisol slopes 10 years later [23].

Partner responsiveness also improves pain regulation. For instance, responsive interactions with partners lead to increases in the release of endogenous opioids, which reduce the experience of pain and also promote felt security and commitment [24]. Recent experimental work has shown that holding the hand — or even just looking at the photo — of a romantic partner can make physical pain more bearable [25] and enhance recovery from recalling emotionally painful memories [26]. Thus, responsive relationships may help to inoculate oneself from chronic physical pain, a hypothesis supported by research showing that greater partner responsiveness is associated with less pain three months after knee replacement surgery [27].

One of the more perplexing findings from the relationships and health literature is that the receipt of social support from close others is sometimes associated with worse physical health, including mortality [28]. Research on responsiveness has helped to resolve this paradox; received partner support predicts greater mortality 10 years later for those who perceive their partner as unresponsive but *not* for those who perceive their partner as responsive [29]. Thus, partner responsiveness may buffer against the potentially harmful health effects of received support. But *how* might partner responsiveness be associated with improved health outcomes — what are the psychological mechanisms? Below, we describe how affective processes may be a key pathway through which partner responsiveness benefits health.

Affective processes

Emotions and their regulation — controlled and automatic — are central to relationships [30]. There is hardly a context in which more frequent and intense emotions are experienced than in close relationships, and affective interdependence is a key characteristic that differentiates between close and more casual relationships. It is likely that relationships confer health-promoting effects, in part, through shaping affective processes. Affective processes figure prominently in theoretical models of relationships and health [3••,4••], and, supporting predictions from these models, we found that the longitudinal association between partner responsiveness and diurnal cortisol profiles described above [23] was mediated by declines in negative affect over the 10-year study period.

Although very few studies have directly tested affective processes as mediators of relationship–health links, indirect evidence is plentiful. Relationships create opportunities for positive affective experiences, amplifying and sustaining the experience of positive emotions in relationships [31,32]. In turn, positive emotions foster closeness and strengthen connections in relationships [33], and through this pathway, they can positively influence our physiology [34]. Likewise, and possibly through accumulated experience of positive social connections [35•], relationships can buffer against negative emotional experiences and facilitate the downregulation of negative emotions and stress [36,37]. Emotions help to facilitate and coordinate interactions between intimate partners, leading not only to interdependence in emotional experience [38], but also to physiological linkage between partners [39]. This linkage is likely rooted in highly dynamic dyadic interaction patterns that feature synchronization, and co-regulatory or dysregulatory dynamics, both on cognitive and physiological levels [40,41], which are indicative of health-relevant relational processes [42,43].

A certain degree of emotional susceptibility or reactivity to cues of an intimate partner is necessary for relationship processes to operate efficiently. If the functions of emotional experience and expression are those of an adaptive process, then healthy interpersonal functioning requires that partners respond to each other's emotions and behaviors in a consistent way. Although emotional sensitivity can be a vulnerability to the detrimental effects of stressors, it is also a necessity in order to benefit from the health-promoting resources (e.g., responsiveness) that relationships might offer. Thus, those who may be more labile in an affective sense can benefit from a partner who is: (a) attuned to the partner's affective

experience (and as a consequence can be more responsive) and (b) also able to experience and express emotion. Theoretical work on individual differences in reactivity to stressors point to the positive potential of a high susceptibility or sensitivity to environmental cues [44,45]. Research on the serotonin transporter gene (5-HTTLPR), for example, suggests that individuals with two short alleles are not only more reactive to stress exposure, but also benefit more from favorable social environments than their counterparts with long alleles [e.g., 46]. Recent evidence extended these findings to marital relationships: Spouses with two short 5-HTTLPR alleles were more susceptible to both negative *and* positive partner behaviors in terms of marital satisfaction than spouses with a long allele [47], and spouses with short alleles were more emotionally susceptible to the partner's negative and positive affect [48].

Interpersonal susceptibility of this kind may thus foster emotional attunement between intimate partners, but does it also confer benefits provided by relationship strengths? Emerging research suggests that a heightened sensitivity to a partner's emotions, and particularly to the partner's positive emotions, may not only be a characteristic of individuals who are more vulnerable and develop symptoms of anxiety and depression, but also characterizes those individuals who improve and recover from heightened psychological distress over several months [49]. Being attuned and susceptible to a partner's affect may serve as an affective basis for the health-promoting effects of supportive partner behaviors. Some, albeit inconsistent links between affect susceptibility and perceived partner responsiveness, and long-term distress recovery point to this possibility [49].

Conclusion

In this article, we laid out a model of marital quality and health, informed by both current social psychological theory and recent research on close relationships and health. Although a considerable number of studies in social psychology have focused on protective factors in relationships that are associated with relationship quality, stability and well-being, comparatively many fewer have focused on the links between protective relationship factors, psychological processes and health. We have highlighted two key psychological processes, partner responsiveness and affective processes, to illustrate ways in which marital and marriage-like relationships can potentially benefit physical health. We view this as an exciting opportunity for relationship scientists and health researchers to work together to answer the important questions of how and under what conditions the close relationships in our lives may be beneficial for our health.

Conflict of interest

Nothing declared.

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