



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

SciVerse ScienceDirect

journal homepage: [www.elsevier.com/locate/psyneuen](http://www.elsevier.com/locate/psyneuen)



# Marital distress prospectively predicts poorer cellular immune function



Lisa M. Jaremka<sup>a</sup>, Ronald Glaser<sup>a,b,c,d</sup>, William B. Malarkey<sup>a,b,d</sup>,  
Janice K. Kiecolt-Glaser<sup>a,d,e,\*</sup>

<sup>a</sup> Institute for Behavioral Medicine Research, The Ohio State University College of Medicine, Columbus, OH 614, United States

<sup>b</sup> Department of Internal Medicine, The Ohio State University College of Medicine, Columbus, OH 614, United States

<sup>c</sup> Department of Molecular Virology, Immunology and Medical Genetics, The Ohio State University College of Medicine, Columbus, OH 614, United States

<sup>d</sup> Comprehensive Cancer Center, The Ohio State University College of Medicine, Columbus, OH 614, United States

<sup>e</sup> Department of Psychiatry, The Ohio State University College of Medicine, Columbus, OH 614, United States

Received 7 May 2013; received in revised form 20 June 2013; accepted 25 June 2013

## KEYWORDS

Psychoneuroimmunology;  
Marriage;  
Marital distress;  
Romantic relationships;  
Longitudinal;  
Cellular immunity

## Summary

**Objective:** Distressed marriages enhance risk for a variety of health problems. Immune dysregulation is one potential mechanism; cross-sectional studies have demonstrated that marital distress is linked to maladaptive immune alterations. The current study filled an important gap in the literature by examining the ability of marital distress to prospectively predict immune alterations over a two-year period.

**Method:** Participants were 90 couples ( $N = 180$  individuals;  $M_{\text{age}} = 25.67$ ) married less than a year at the time of their first study visit. Both members of a couple completed a baseline assessment of marital quality and provided blood samples at baseline and two years later. 63 couples ( $N = 123$  individuals) completed the follow-up assessment.

**Results:** Spouses in more distressed marriages had larger declines in cellular immune function over time than spouses in less distressed marriages. Furthermore, the results were highly consistent across two different indices, proliferative responses to two mitogens, concanavalin A (Con A) and phytohemagglutinin (PHA).

**Conclusions:** Marital distress has a variety of negative health consequences. The current study provided important evidence that marital distress has longer-term immune consequences. Accordingly, the present results provide a glimpse into the pathways through which marital distress may impact health over time.

© 2013 Elsevier Ltd. All rights reserved.

\* Corresponding author at: Institute for Behavioral Medicine Research, The Ohio State University College of Medicine, 460 Medical Center Drive, Columbus, OH 43210, United States. Tel.: +1 614 293 3499.

E-mail address: [Janice.kiecolt-glaser@osumc.edu](mailto:Janice.kiecolt-glaser@osumc.edu) (J.K. Kiecolt-Glaser).

Being married confers health benefits. For example, married people had lower premature all-cause mortality rates, higher 5-year cancer survival rates, and fewer chronic health conditions than their non-married counterparts (Johnson et al., 2000; Schoenborn, 2004; Sprehn et al., 2009). On the other hand, distressed marriages enhance risk for a variety of health problems, such as coronary heart disease, delayed wound healing, metabolic syndrome, and premature all-cause mortality (Orth-Gomér et al., 2000; Kiecolt-Glaser and Newton, 2001; Kiecolt-Glaser et al., 2005; Troxel et al., 2005; Holt-Lunstad et al., 2010). Importantly, the links between distressed marriages and health remain after controlling for sociodemographic and health-relevant risk factors. Furthermore, a recent meta-analysis concluded that the link between distressed marriages and health was on par with the negative effects of health behaviors like a poor diet (Robles et al., in press).

Because marital distress is a chronic interpersonal stressor, stress-relevant physiological mechanisms may provide insight into the link between marital distress and health. Immune dysregulation may be one mechanistic pathway because stress alters immune function and the immune system is essential to health (Robles et al., in press; Robles and Kiecolt-Glaser, 2003). For example, inflammation and other forms of immune dysregulation increase risk for premature all-cause mortality and a variety of diseases including cardiovascular disease, cancer, and metabolic syndrome (Ershler and Keller, 2000; Hansson, 2005; Hotamisligil, 2006; Nabipour et al., 2006; Parkin, 2006).

A growing body of works demonstrates cross-sectional links between distressed marriages and immune dysregulation. For example, people in more distressed marriages had smaller antibody responses to an influenza virus vaccine than people in less distressed marriages (Phillips et al., 2006). Compared to more happily married people, spouses in more distressed marriages had poorer cellular immune function, as indexed by lower proliferative responses to two mitogens, concanavalin A (Con A) and phytohemagglutinin (PHA; Kiecolt-Glaser et al., 1987). Furthermore, individuals in more distressed marriages had higher Epstein–Barr virus (EBV) antibody titers than those in less distressed marriages (Kiecolt-Glaser et al., 1987, 1988). Because herpesviruses such as EBV are better able to reactivate and replicate when the cellular immune system is compromised, higher antibody titers to a latent herpesvirus reflect poorer cellular immune system control over viral latency (Glaser and Jones, 1994).

Observational studies of marital conflict discussions provide another window into marital distress; behavioral coding systems assess relationship behaviors between romantic partners as an index of relationship quality. A provocative study using this paradigm demonstrated that wound healing, an immune-mediated event, was slower after a marital disagreement than a socially supportive discussion (Kiecolt-Glaser et al., 2005). In addition, production of inflammatory cytokines at the wound site was lower following the conflict than the support discussion. In contrast to heightened systemic inflammation, which is linked to a variety of age-related diseases (Harris et al., 1999; Ershler and Keller, 2000; Hansson, 2005; Hotamisligil, 2006), local inflammation at the wound site is adaptive and critical to effective wound healing.

Negative and hostile behaviors during a conflict discussion, such as blaming or interrupting the partner, appear to

be particularly detrimental. A conflict discussion led to slower wound healing among couples displaying more hostile behaviors compared with their less hostile counterparts (Kiecolt-Glaser et al., 2005). Furthermore, whereas hostile couples had higher systemic inflammation following a conflict discussion compared to a social support discussion, low hostile couples had similar levels of inflammation across both discussions (Kiecolt-Glaser et al., 2005). Other studies using the marital disagreement paradigm provide evidence for additional immune alterations. For example, spouses whose discussions were more hostile had higher serum antibody titers to latent EBV than spouses whose discussions were less hostile (Kiecolt-Glaser et al., 1993). The cellular immune response plays an important role in controlling the expression of latent EBV, and thus these data are consistent with greater EBV reactivation among distressed individuals (Glaser et al., 1994). Compared to their less hostile counterparts, more hostile couples also had larger declines in two different indices of cellular immune function during the 24 h following the disagreement (Kiecolt-Glaser et al., 1993).

The immunological consequences of marital distress may be particularly strong for women compared with men (Kiecolt-Glaser and Newton, 2001). For example, marital stress was associated with heightened systemic inflammation in young women but not young men (Whisman and Sbarra, 2012). A marital conflict discussion led to greater immune dysregulation among women compared with men (Kiecolt-Glaser et al., 1993; Mayne et al., 1997).

## 1. The current study

Taken together, prior research suggests a reliable link between marital distress and concurrent immune dysregulation, particularly cellular immunity. *To date, little to no work has addressed whether marital distress alters the trajectory of immune function over time (Robles et al., in press). Longitudinal studies are needed to understand the directional nature of the link between marriage and immune function in a naturalistic context.* Accordingly, the current study, which followed newlywed married couples over a two-year period, fills an important gap in the literature.

We selected three measures of cellular immune function, EBV antibody titers and T-cell proliferation in response to Con A and PHA, because previous studies have shown that cellular immunity is modulated by interpersonal stress (Kiecolt-Glaser et al., 1987, 1993). In addition, proliferative responses to Con A and PHA may index the immune system's response to bacterial and viral challenges. Indeed, the cellular immune response is critical to the effective resolution of viral and bacterial infections, among other functions. Proliferative responses also decrease with age (Antel et al., 1980; Wayne et al., 1990); decreased T-cell proliferation is part of immunosenescence, the aging of the immune system that is linked to age-related diseases (Malaguarnera et al., 2001).

We hypothesized that, compared to spouses in less distressed marriages, those who were more distressed would exhibit greater immune dysregulation over time, as evidenced by higher EBV antibody titers and decreased proliferative responses. Based on prior research suggesting possible immune-related gender differences, we also explored whether gender moderated the relationship between marital distress and immune function over time.

Download English Version:

<https://daneshyari.com/en/article/10305809>

Download Persian Version:

<https://daneshyari.com/article/10305809>

[Daneshyari.com](https://daneshyari.com)