

## RESPONSE

### A Grateful Heart May Be a Healthier Heart

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In their thoughtful commentaries, [Doraiswamy and Oz \(2015\)](#) and [McClintock \(2015\)](#) draw on poets, mystics, and the biomedical literature to increase our appreciation of the importance of gratitude for cardiac health as well as overall spiritual well-being.

The field of behavioral cardiology ([Pickering, Clemow, Davidson, & Gerin, 2003](#)) has undergone a significant transition over the past decade or so. Early research focused primarily on so called negative psychological traits, with Friedman and Rosenman's Type A behavior pattern, which was first identified in cardiovascular disease patients and characterized by hostility, competitiveness, and time urgency ([Friedman & Rosenman, 1959](#)), setting the stage. Over the ensuing decades most studies continued with this focus and expanded it to include topics of stress, anger, anxiety, and depression ([Rozanski, Blumenthal, & Kaplan, 1999](#); [Sheps & Sheffield, 2001](#)). Numerous articles document the significant adverse associations of such traits with morbidity and mortality in cardiac patients ([Chida & Steptoe, 2009](#); [Rutledge, Reis, Linke, Greenberg, & Mills, 2006](#)).

The transition in behavioral cardiology has been of an increasing interest in the effects of more positive psychological attributes such as

compassion, empathy, and gratitude, among others. For gratitude research in particular, [Figure 1](#) shows the number of studies that have appeared in the scientific literature since 1965, with the number of articles appearing between 2010 and the present being greater than all the prior years' publications combined. In contrast to the adverse associations and effects of negative psychological traits on well-being and outcomes, studies of positive psychological attributes indicate beneficial effects on overall quality of life as well as physical health in cardiac patients ([DuBois et al., 2012](#)). In heart failure patients in particular, gratitude has been identified as a significant resource for alleviating the struggles associated with symptomatology ([Sacco, Park, Suresh, & Bliss, 2014](#)).

In their commentary, [Doraiswamy and Oz \(2015\)](#) correctly point out that our "cross-sectional study cannot determine causality." In this regard, we recently completed a randomized, controlled trial of an 8-week gratitude journaling intervention in 40 Stage B patients. In his commentary, [McClintock \(2015\)](#) notes that gratitude "can be consciously cultivated" to "shift one's attention away from the negative . . . and into the good and the beautiful." We used journaling as such a way to cultivate gratitude, with the aim of increasing its presence in the patients' lives and thus enhancing its potentially beneficial effects on their wellbeing. In this trial we found that those patients who were randomized to gratitude journaling plus their usual care, versus patients who were randomized to usual care alone, showed increased heart rate variability as well as reduced circulating levels of inflammatory biomarkers IL-6 and sTNFr1 ([Redwine et al., in press](#)).

We are currently in the process of conducting qualitative assessments of the journals themselves to explore potential associations of journaling content and the observed beneficial outcomes. Gratitude journaling is a low-cost

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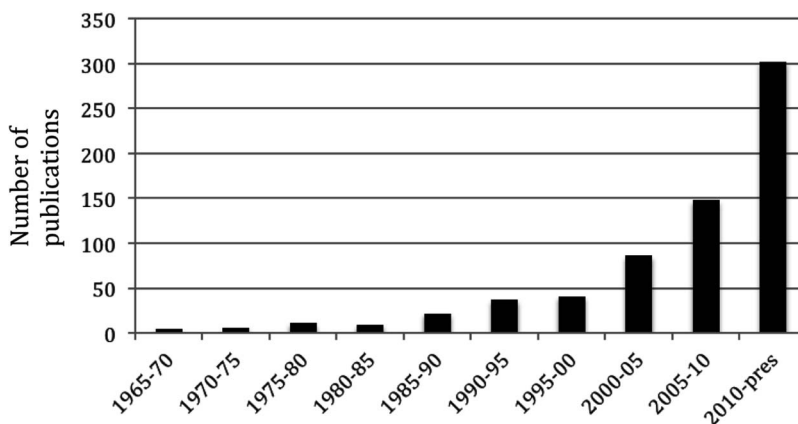


Figure 1. The number of publications appearing in PubMed by 5-year increments from 1965–1970 to the present using the search word “gratitude.”

and easily implementable intervention that may have significant beneficial effects to enhance health in cardiac patients.

A more grateful heart may indeed be a more healthy heart.

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