

# Repetitive Negative Thinking, Depressive Symptoms, and Cortisol in Cancer Caregivers and Noncaregivers

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**OBJECTIVES:** To examine the effect of informal cancer caregiving and repetitive negative thinking (RNT) on depressive symptoms and salivary cortisol levels.

**SAMPLE & SETTING:** The sample was recruited from a hospital bone marrow unit and caregiver support organizations. It included 60 informal cancer caregivers (52% partners) of individuals with cancer who provided care for a median of 27.5 hours per week for 12 months, and 46 noncaregiver participants.

**METHODS & VARIABLES:** In this cross-sectional study, participants completed questionnaires assessing RNT and depressive symptoms and provided saliva samples to measure cortisol levels.

**RESULTS:** Cancer caregiving and RNT, but not the interaction, were associated with more depressive symptoms. RNT, but not cancer caregiving, was associated with salivary cortisol. A disordinal interaction effect suggests that cancer caregiving was associated with lower cortisol levels, and RNT in noncaregivers was associated with higher cortisol levels.

**IMPLICATIONS FOR NURSING:** Given that RNT is related to depressive symptoms and cortisol, connecting cancer caregivers who experience RNT to resources and the development and evaluation of brief nurse-led interventions to reduce RNT in informal cancer caregivers seems warranted.

**KEYWORDS** cancer caregivers; repetitive negative thinking; depressive symptoms; salivary cortisol

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According to the National Alliance for Caregiving (2016), more than 2.8 million family members and friends provided care for individuals with cancer in the United States in 2015. With this prevalence, cancer is one of the most common health issues requiring informal caregiving (Aoun, 2004). In addition, cancer can require years of caregiving, and, in many cases, caregiving can become equivalent to a full-time job ( $\bar{X} = 31.8$  hours per week,  $SD = 34.46$  hours) (Kim & Schulz, 2008).

Cancer caregivers experience more psychological stress (Jansen et al., 2018) and stress-related mental health conditions, such as depression, than noncaregivers (Bevans et al., 2016; Goren, Gilloteau, Lees, & DaCosta Dibonaventura, 2014). Cancer caregivers exhibit high rates of depression and depressive symptoms, ranging from 10%–53% (Girgis, Lambert, Johnson, Waller, & Currow, 2013).

Although patterns may vary based on stress or mental health condition, heightened stress among caregivers is also reflected at the physiologic level, such as elevated cortisol levels (Allen et al., 2017). Elevated levels of cortisol are important because cortisol is related to depression (Burke, Davis, Otte, & Mohr, 2005) and is a risk factor for cardiovascular disease (CVD) (Hamer, Endrighi, Venuraju, Lahiri, & Steptoe, 2012; Hamer, O'Donnell, Lahiri, & Steptoe, 2010). However, as Park, Ross, Klagholz, and Bevans (2018) argued in their review, the use of biomarkers in cancer caregiver research is underdeveloped. This is problematic because the integration of biomarkers into informal caregiver research provides a more comprehensive assessment of an individual's health (Corwin & Ferranti, 2016). Data examining the effects of caregiver stress on psychological and physiological functioning may contribute to interventions that address heightened rates of