

Empathic Accuracy Deficits in Patients with Neurodegenerative Disease: Association with Caregiver Depression

Casey L. Brown, M.A., Sandy J. Lwi, Ph.D., Madeleine S. Goodkind, Ph.D.,
Katherine P. Rankin, Ph.D., Jennifer Merrilees, R.N., Ph.D., Bruce L. Miller, M.D.,
Robert W. Levenson, Ph.D.

Objectives: To investigate whether deficits in empathic accuracy (i.e., ability to recognize emotion in others) in patients with neurodegenerative disease are associated with greater depression in their caregivers. **Design:** Two cross-sectional studies. **Setting:** Academic medical center and research university. **Participants:** Two independent samples ($N = 172$, $N = 63$) of patients with a variety of neurodegenerative diseases and their caregivers; comparison group of healthy couples. **Measurement:** Patients' empathic accuracy was assessed in the laboratory using a novel dynamic tracking task (rating another person's changing emotions over time) and more traditional measures (recognizing the emotion expressed in photographs of facial expressions and by characters in films). Caregivers completed self-report inventories of depression. **Results:** Lower empathic accuracy in patients was associated with greater depression in caregivers in both studies. In study 1, this association was found when empathic accuracy was measured using the dynamic tracking measure but not when measured using the more traditional photograph and film measures. In study 2, we found preliminary support for our theoretical model wherein lower empathic accuracy in patients is associated with increased caregiver stress (loneliness, strain, and burden), which in turn is associated with greater caregiver depression. **Conclusions:** Caring for a patient with deficits in empathic accuracy is associated with greater loneliness, strain, and burden for caregivers, and increased depression. Caregivers may benefit from interventions designed to compensate for the stress and interpersonal loss associated with patients' declining empathic accuracy. (Am J Geriatr Psychiatry 2017; ■■■:■■■-■■■)

Key Words: Caregiver, depression, empathic accuracy, neurodegenerative disease

Highlights

- Across two independent studies, lower empathic accuracy in neurodegenerative patients was associated with greater depressive symptoms in their caregivers.

Received August 9, 2017; revised October 5, 2017; accepted October 18, 2017. From the Department of Psychology (CLB, SJL, RWL), University of California, Berkeley, CA; Behavioral Health Care Line, The New Mexico VA Health Care System (MSG), Albuquerque, NM; and the The Memory and Aging Center (KPR, JM, BLM), University of California, San Francisco, CA. Send correspondence and reprint requests to Robert W. Levenson, Ph.D., Institute of Personality and Social Research, Department of Psychology, University of California, 4143 Tolman Hall MC 5050, Berkeley, CA 94720-5050. e-mail: boblew@socrates.berkeley.edu

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<https://doi.org/10.1016/j.jagp.2017.10.012>

- Associations between patient empathic accuracy and caregiver depressive symptoms were found when accuracy was measured via caregiver report or with a dynamic tracking task.
- Patients' ability to recognize specific emotions portrayed in photographs or films was not associated with caregiver depressive symptoms.
- The association between lower patient empathic accuracy and greater caregiver depressive symptoms was accounted for by increased loneliness, burden, and strain in caregivers.

Neurodegenerative diseases produce profound deficits in cognitive, emotional, and motor functioning. As these diseases progress, patients become increasingly impaired and dependent on caregivers for assistance. For many patients, close loved ones play a primary caregiving role. The psychiatric morbidity associated with caregiving is well established,¹ including up to fourfold increases in rates of depression.² These elevations in caregiver depression are all the more striking given that caregiving most commonly occurs in late life, a time when depression rates normally drop.³

Individual Differences in Caregiver Vulnerability

Caregiving is challenging to all. Nonetheless, some caregivers move through the experience relatively intact, whereas others spiral downward in a trajectory of declining mental health. Understanding this variability has become an important part of caregiver research. A consistent theme emerging from two decades of reviews of adverse outcomes in caregivers of dementia patients (e.g., Ornstein and Gaugler,⁴ Schulz et al.¹) has been that behavioral and psychological symptoms of dementia (BPSDs) are strongly associated with psychiatric morbidity in caregivers (even more so than cognitive and functional symptoms). BPSDs encompass a wide range of behaviors (e.g., aggression, agitation, sleep disturbance, wandering). There are considerable differences among investigators as to which behaviors are included in BPSDs and how they are best measured. This has led to calls for more research on specific patient symptoms associated with adverse caregiver outcomes and on the mechanisms that link patient symptoms with these outcomes.⁴

Emotional Symptoms in Patients: Impact of Deficits in Emotion Recognition

Among BPSDs, many have clear links to patients' emotional functioning (e.g., agitation, depression).

Deficits in emotional functioning are seen in a number of neurodegenerative diseases.⁵ These deficits can take a variety of forms including alterations in emotional reactivity (generating emotional responses), regulation (adjusting emotional responses to situational demands), and recognition (knowing what others are feeling). Among these, deficits in emotion recognition can be particularly difficult for caregivers, and are found in a variety of neurodegenerative diseases (e.g., Ghosh et al.,⁶ Kumfor et al.⁷). When patients are insensitive to others' emotions, caregivers may feel increasingly unsupported, which impairs the quality of patient-caregiver relationships.⁸ The loss of a supportive relational partner has been associated with heightened stress and loneliness, factors that are well-established longitudinal contributors to the development of depression.^{9–11}

Measuring Empathic Accuracy

There are a number of ways of measuring emotion recognition. Although early measures were largely based on respondents' self-assessments, contemporary approaches typically assess ability to recognize emotion using an external criterion for accuracy (empathic accuracy¹²). In the dementia literature, empathic accuracy has been measured by having patients identify emotions portrayed in static facial expressions¹³ or expressed by a character in a film.¹⁴ These tests have proven quite useful, but have limits in their ecological validity. In the real world, emotion recognition typically involves: 1) integrating multiple types of information (visual, auditory, etc.); 2) processing information from multiple bodily regions (e.g., face, posture); 3) monitoring behaviors that occur in interpersonal situations; and 4) tracking continuously changing emotions as they ebb and flow over time. For these reasons, in research with neurologically healthy individuals, investigators increasingly measure em-

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