Invited Commentary | Neurology

Stress, Distress, Tensity, Neuroticism, and Risk of Dementia

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Several scientific giants have contributed to our insights about stress. Charles Darwin in his monumental work *The Origin of Species* had written that survival is the interaction of the biological world with the harsh and stressful environment. Claude Bernard had stated that adaptation of an organism to a changing environment is possible by keeping the internal environment stable and constant. Walter B. Cannon was the first to introduce some psychological aspects of stress by formulating the Fight or Flight model of the stress response. In the 1930s, Hans Selye advanced the concept of the General Adaptation Syndrome known for emphasizing that the stages of response to stress—alarm, resistance, and exhaustion—are based on neural and hormonal processes that are taking place in the body. The effects of stress on the development of dementia is a relatively new field of study with a few scattered publications in the 1960s and a surge of studies in the past decade.

Sulkava et al published their study about the association between psychological distress and incident dementia with a sophisticated analysis of competing risk of death. The findings indicate that stress, depressive mood, nervousness, and exhaustion were associated with a 17% to 24% increased risk of dementia. To the reader who is not an expert in dementia, or what I call a “dementologist,” this may seem a powerful and clinically meaningful finding. However, the study of stress and distress and their lifelong effects on brain health is far from being incisive.

Depression has been systematically studied in relation to dementia and Alzheimer disease and is associated with an increased risk of dementia although not all experts agree as to the timeline of this association in one’s lifecycle. There are fewer studies examining whether anxiety is independently associated with dementia, and this research effort is complicated by studying concepts closely related to anxiety such as stress, distress, neuroticism, and personality style. Especially relevant to understanding the study by Sulkava et al is neuroticism, which can be conceptualized as an abiding tendency toward depression or anxiety in stressful circumstances. The definition of stress or depression in the study by Sulkava et al was based on a self-report answering a question about the prior month. This negates any possibility of understanding the role of stress as a causative agent in the development of dementia, as no information on either lifelong neurotic-like traits nor about clinically diagnosed anxiety or depression is collected. What does it really mean when a participant in a study declares that in the past month, they have felt somewhat stressed “...but no more than usual...”? We will find it challenging to assign this reply a place in the Hans Selye adaptation model. It is the biopsychosocial reaction to and management of stress that are likely associated with risk of developing dementia. In 2018, Sutin et al completed a comprehensive analysis asking whether 8 aspects of psychological distress and self-beliefs—anxiety, negative affect, hostility, anger-in, anger-out, hopelessness, pessimism, perceived constraints—are associated with risk of incident dementia. Nearly 10,000 participants from the Health and Retirement Study completed the baseline measures, were cognitively intact at baseline, and had cognitive status assessed across the 6- to 8-year follow-up. Participants who scored higher on anxiety, negative affect, hostility, pessimism, hopelessness, and perceived constraints were at a 20% to 30% increased risk of dementia. Pessimism, and especially hopelessness, like other aspects of psychological distress has been found to be associated with worse health, independent of depression, including intermediate markers of dementia risk.

These findings suggest that to solve the conundrum surrounding the association of depression and anxiety with risk of dementia we need to look into enduring patterns of perceiving the internal and external environment over long periods and through phases of our lifecycle. Sulkava et al added...
an important facet to the field by accounting for competing risk of death. This should become a standard when researching these questions. We need to advance the field farther by creatively studying lifelong patterns of emotional states and relationships. The recent study by Hong et al is a great example showing that living with a patient with dementia is associated with increased odds of stroke. Life trajectories of individuals and couples will teach us more about stress, distress, tensity, neuroticism and dementia.

ARTICLE INFORMATION

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Conflict of Interest Disclosures: None reported.

REFERENCES


