For Accelerated Aging, Inflammation, and Multimorbidity Negative Social Ties as Emerging Risk Factors

Researchers investigated whether negative social relationships are associated with accelerated biological aging.

Study

Researchers analyzed data from the Person-to-Person Health Interview Study conducted in Indiana, which included biomarkers and detailed measures of social interactions within personal networks. The sample was state-representative and age-heterogeneous.

Participants ranged in age from 18 to 103 years, enabling assessment of epigenetic aging across the life course. Epigenetic aging measures included GrimAge2 and DunedinPACE epigenetic clocks, which capture biological age relative to chronological age and the pace of biological aging, respectively. Both measures showed substantial variation across chronological age groups, including younger individuals exhibiting elevated epigenetic age acceleration relative to peers.

Older individuals, on average, showed faster rates of aging. "Hasslers" were defined as network members who often created problems, made life difficult, or caused stress. Among the 2,685 participants, nearly 29 percent reported at least one hassler in their social network.

Findings

The researchers examined demographic, psychosocial, occupational, and health predictors of exposure to negative ties. Females were significantly less likely than males to report having zero hasslers. Although occupational differences were not statistically significant, unemployed participants tended to report more hasslers than employed individuals.

Education, race, age, lifetime multimorbidity, health insurance status, and marital status were not significantly associated with hassler presence. Daily smokers and individuals reporting poorer overall health were more likely to report hasslers, suggesting possible bidirectional relationships between health status and social strain.

Psychosocial factors were important predictors. Individuals with more adverse childhood experiences (ACEs) were more likely to report hasslers. A larger network size was associated with a higher expected number of hasslers and a lower probability of having none.

Participants who felt others relied heavily on them reported more hasslers, whereas those who perceived themselves as important to others were less likely to report hasslers. Network analyses showed that hasslers often occupied more peripheral positions within personal networks and were typically weaker or less multifaceted ("multiplex") ties.

The researchers also examined whether hasslers were associated with other health outcomes beyond epigenetic aging, including inflammation markers and multimorbidity patterns.

Mental health outcomes showed the strongest associations. Each additional hassler was associated with a 0.25 standard deviation (SD) increase in anxiety severity, a 0.28 SD increase in depression severity, and a 0.22 SD decline in overall mental health. Associations with adiposity and physical health outcomes were more modest but statistically significant. Each additional hassler was associated with higher body mass index, poorer general and physical health, and a higher waist-to-hip ratio.

Conclusion

Overall, negative social relationships were associated with greater epigenetic age acceleration and may operate as chronic stressors linked to epigenetic and physiological risk profiles. Respondents with more hasslers exhibited greater biological aging and faster aging pace.

Because the study was observational and cross-sectional, causality cannot be established. Reverse causation or shared vulnerabilities may partly explain the associations. Nonetheless, interventions aimed at reducing relationship strain could support healthier aging and reduce the burden of age-related disease, although experimental and longitudinal evidence is needed.

Source:

https://www.news-medical.net/news/20260225/Having-e2809chasslerse2809d-in-your-network-linked-to-faster-aging-and-poorer-health.aspx