Exploring the Moderating Role of Socioeconomic Status in the Relationship Between Inflammation and Cognitive Function

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The following is an excerpt from a longer piece. For the full text, please scan the QR code.

Abstract

This study examines the interaction between inflammation, socioeconomic status (SES), and cognitive performance, focusing on working memory as a key cognitive domain. Using data from the Effects of Stress on Cognitive Aging, Physiology, and Emotion (ESCAPE) project, we investigated the moderating role of both objective and subjective SES in the relationship between C-reactive protein (CRP) levels and working memory performance. The sample consisted of 202 adults aged 25-65 (M = 46.46, SD = 11.08) from Bronx County, New York, with varying levels of SES. Multiple regression analyses revealed that lower subjective SES, as measured by the US ladder, combined with higher CRP levels, was associated with improved working memory performance. This effect was not observed for objective SES indicators, such as income and education. Further analyses explored the moderating roles of age, sex, and ethnicity, revealing that low education and higher CRP were linked to better working memory in younger individuals. However, post-hoc adjustments for multiple comparisons rendered most of these effects non-significant. Additional follow-up analyses showed that high income and low basal cytokines predicted better working memory performance, while low subjective SES combined with low stimulated cytokines predicted better working memory in younger individuals. No significant findings were observed for episodic memory. These results suggest that the relationship between inflammation, SES, and cognitive function is complex and may be influenced by both biological and psychosocial factors.