

Childhood Maltreatment And Accelerated Cognitive Aging: Distinct Psychosocial Pathways Across Ethnoracial Groups

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Introduction

- Childhood maltreatment is increasingly recognized as a contributor to accelerated cognitive aging and dementia risk through long-term dysregulation of stress-related psychological and biological systems.¹
- Depressive symptoms and perceived stress may represent key psychosocial pathways linking early-life adversity to later-life cognitive decline across adulthood.^{1,2}
- Accelerated aging and weathering frameworks suggest that cumulative exposure to adversity may produce stronger and more direct cognitive consequences among ethnoracial minority adults.³

Objective

- The current study examined whether depressive symptoms and perceived stress serially mediated the relationship between childhood maltreatment and longitudinal cognitive decline, while testing ethnoracial differences in these pathways.

Methodology

Design: longitudinal analysis of 692 adults from the Midlife in the United States Study at MIDUS 2 (56% female, 19.5% ethnoracial minority, M age = 54.44 ± 11.46).

Measures: Depressive symptoms (CES-D)⁴, Childhood Maltreatment (CTQ)⁵, Perceived Stress (PSS)⁶ and Cognitive Performance (BTACT)⁷ at waves II and III

Covariates: age, education, gender, allostatic load

Analytic approach: Analyses were conducted using Hayes' PROCESS macro for SPSS, using a moderated serial mediation Model 92, with additional subgroup serial mediation analyses conducted using Model 6.

Key Findings

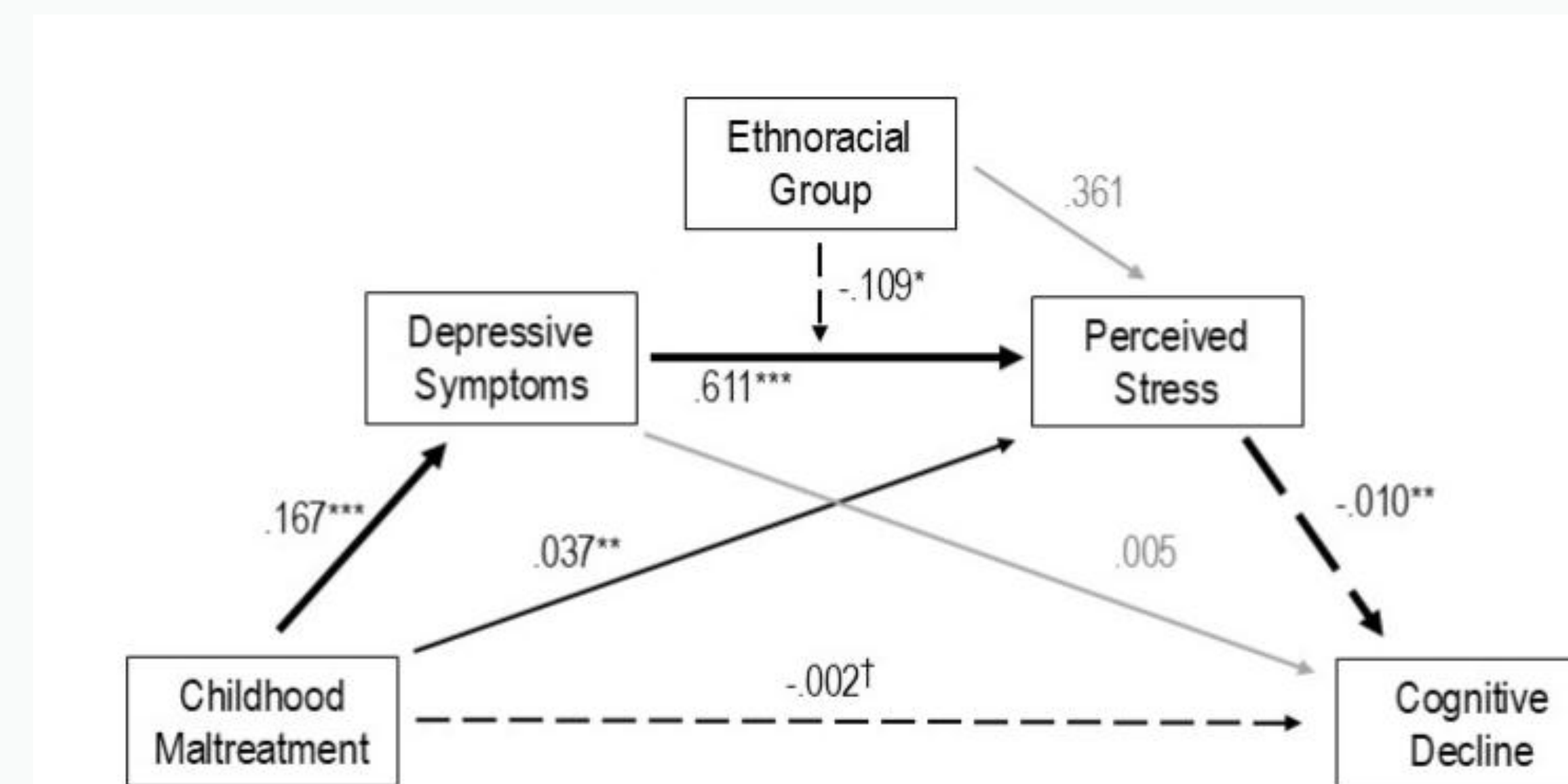


Figure 1. Moderated serial mediation model examining the relationship between childhood maltreatment and longitudinal cognitive decline through depressive symptoms and perceived stress.

- Overall Sample:** Greater childhood maltreatment was associated with higher depressive symptoms and perceived stress, which together contributed to poorer cognitive functioning across midlife and older adulthood.
- Non-Hispanic White (NHW) Subsample:** Depressive symptoms and perceived stress emerged as significant serial mediators linking childhood maltreatment to cognitive functioning, suggesting affective stress processes may play a key role in cognitive aging pathways among NHW adults.
- Ethnoracial Minority (ERM) Subsample:** Although childhood maltreatment predicted greater depressive symptoms and perceived stress, the indirect pathways to cognitive functioning were weaker and non-significant, indicating potential differences in psychosocial or resilience processes across ethnoracial groups

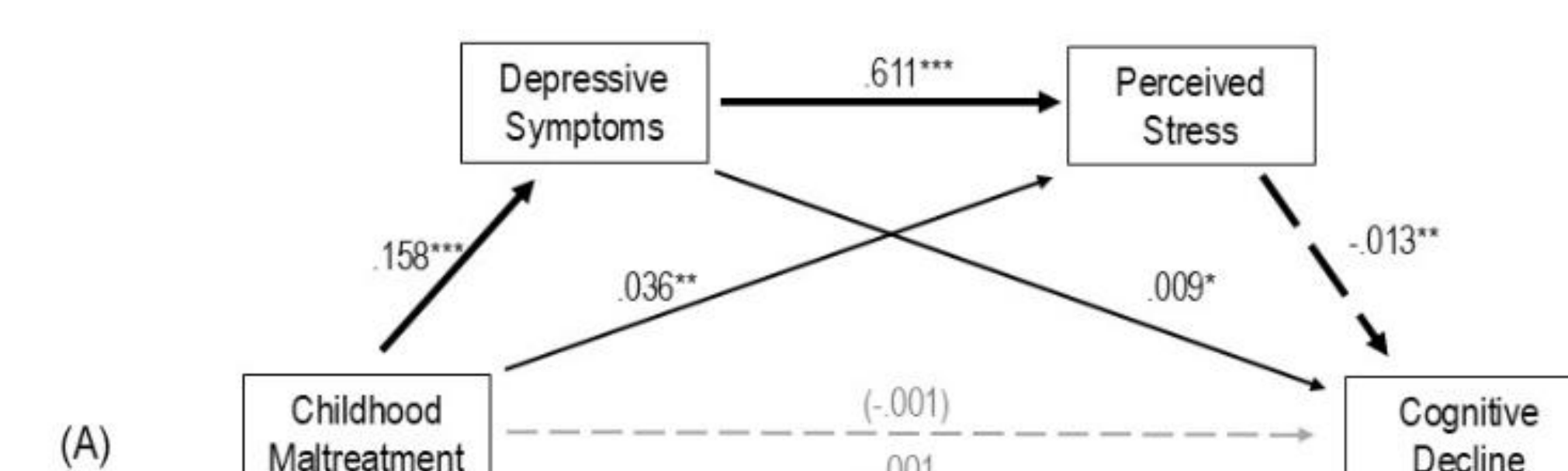
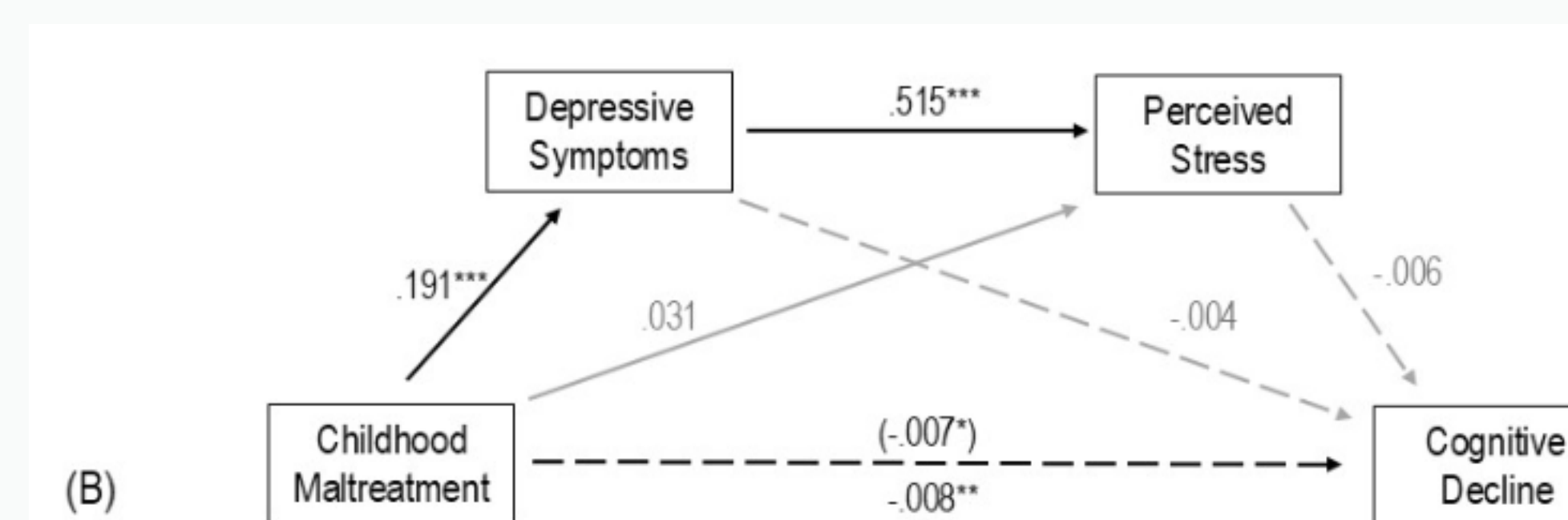


Figure 2A. Serial mediation model among non-Hispanic White participants examining the relationship between childhood maltreatment and longitudinal cognitive decline through depressive symptoms and perceived stress.

Figure 2B. Serial mediation model among ethnoracial minority participants examining the relationship between childhood maltreatment and longitudinal cognitive decline through depressive symptoms and perceived stress.



Discussion

- Childhood maltreatment was associated with longitudinal cognitive decline through depressive symptoms and perceived stress, supporting stress-related models of accelerated cognitive aging.
- Ethnoracial differences emerged in the mechanisms linking childhood maltreatment to cognition, suggesting that psychosocial pathways may operate differently across sociocultural contexts.
- Among non-Hispanic White participants, childhood maltreatment influenced cognitive decline indirectly through depressive symptoms and perceived stress, whereas among ethnoracial minority participants, childhood maltreatment demonstrated a stronger direct relationship with cognitive decline, supporting weathering frameworks suggesting that cumulative adversity may become biologically embedded over the life course.

Limitations:

- The observational design limits causal inference regarding the directionality of relationships between childhood maltreatment, psychosocial distress, and cognitive decline.
- Ethnoracial status was operationalized as a dichotomous variable, limiting the ability to examine heterogeneity and culturally specific mechanisms across distinct racial and ethnic groups.

Future Directions:

- Future research should examine potential mood-state or responder bias in retrospective reports of childhood maltreatment, incorporate more diverse ethnoracial subgroup analyses, and integrate longitudinal biomarkers and neuroimaging approaches to better characterize the biological embedding of adversity across the life course.

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