

An Integrative Review of Early Life Adversity and Cortisol Regulation in Pregnancy”

Crystal Epstein, Julia Houfek, Michael Rice, and Sandra Weiss; School of Nursing,
University of North Carolina at Greensboro

Background: Research with varied populations indicates that early life adversity leads to persistent alterations in the hypothalamic-pituitary-adrenal (HPA) regulation of cortisol. In pregnant women, such alterations could have major implications for mental, physical and reproductive health.

Objective: The aim of this integrative review was to synthesize published findings on the relationship between early life adversity and HPA cortisol parameters in pregnant women.

Data sources: We searched PubMed, CINAHL, and PsychINFO databases using variants and combinations of the keywords early life adversity, pregnancy, hypothalamic-pituitary-adrenal axis, and cortisol.

Study selection: We selected articles that included pregnant participants, included measures of both cortisol and early life adversity, were published in English in a peer-reviewed journal, and were of sufficient methodological quality. Date of publication was unrestricted through May 2020.

Data extraction: Twenty-five articles met the inclusion criteria and were evaluated for quality and risk of bias. Sources of cortisol included saliva, hair, plasma, and amniotic fluid.

Data synthesis: Findings were categorized according to four physiologically distinct cortisol output parameters: diurnal (daily pattern), phasic (in response to an acute stressor), tonic (baseline level) and pregnancy-related change. Preliminary evidence suggests that early adversity may be associated with elevated cortisol awakening response (diurnal) and blunted response to acute stressors (phasic), irrespective of other psychosocial symptoms or current stress. For women with high levels of current stress or psychological symptoms, early adversity was associated with higher baseline (tonic) cortisol levels.

Conclusion: Early life adversity in women is linked with alterations in cortisol regulation that are apparent during pregnancy. Future research should examine how variations in each cortisol parameter differentially predict pregnancy health risk behaviors, maternal mental health, and neonatal health outcomes.