

The buffering effect of social support on hypothalamic-pituitary-adrenal axis function during pregnancy

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Abstract

Objective: Recent studies suggest that effective social support during pregnancy may buffer adverse effects of maternal psychological distress on fetal development. The mechanisms whereby social support confers this protective advantage, however, remain to be clarified. The aim of this study was to assess whether individual differences in social support alter the co-variation of psychological distress and cortisol during pregnancy.

Methods: Eighty two pregnant women's psychological distress and cortisol were prospectively assessed in all three trimesters using an ecological momentary assessment strategy. Appraisal of partner social support was assessed in each trimester via the Social Support Effectiveness questionnaire.

Results: In multilevel analysis, ambulatory assessments of psychological distress during pregnancy were associated with elevated cortisol levels, unstandardized $\beta = .023$, $p <$

$.001$. Consistent with the stress buffering hypothesis, social support moderated the association between psychological distress and cortisol, unstandardized $\beta = -.001$, $p = .039$, such that the co-variation of psychological distress and cortisol increased with decreases in effective social support. The effect of social support for women with the most effective social support was a 50.4% reduction in the mean effect of distress on cortisol and a 2.3 fold increase in this effect for women with the least effective social support scores.

Conclusions: Pregnant women receiving inadequate social support secrete higher levels of cortisol in response to psychological distress as compared to women receiving effective social support. Social support during pregnancy may be beneficial because it decreases biological sensitivity to psychological distress, potentially shielding the fetus from the harmful effects of stress-related increases in cortisol.

Keywords: Social Support; psychological distress; salivary cortisol; pregnancy; HPA Axis; Biobehavioural Coherence.