The Effect of Acculturative Stress on Cortisol and Body Mass Index

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Introduction: Acculturation is a dynamic process that occurs in individuals as they transition into a new culture. During the process of acculturation individuals may experience acculturative stress (AS). AS is related to the changes in environment, support systems, finances, and language barriers that occur during the transition as individuals acclimate to the demands of the new culture. AS has been linked to poor health outcomes including depression, CVD and diabetes. In this study we hypothesized AS to be a predictor of cortisol in pregnant Mexican American women. Cortisol is a hormone that is released by the adrenal glands during the stress response that assists with glucose production and immune function. Chronic excess production can lead to altered glucose metabolism and immune function. Further, we hypothesized a positive relationship between cortisol and body mass index (BMI).

Method(s): An observational design of 512 Hispanic pregnant women was used to investigate the relationship of AS on cortisol and BMI. We used the instrument Multidimensional Acculturative Stress Inventory (MASI) to assess AS. We used reported pre-pregnancy weight and measured height to calculate pre-pregnancy BMI. Cortisol was measured by ELISA method on venous blood collected at 22-24 weeks gestation between 1300-1500 hours. We used regression analysis and Pearson correlation to identify relationships.

Results: Consistent with our first hypothesis, our data indicated Mexican cultural identity was a marginal negative predictor for cortisol (t = -1.76, p < .07); American cultural identity was a significant positive predictor for cortisol (t = 2.12, p < .03). Further, Spanish competency pressures were positively related to levels of cortisol (r = .08, p < .05). In contrast with our hypothesis, our data showed a negative relationship between BMI and cortisol (r = -.26, p < .01).

Discussion & Conclusions: This study supports our first hypothesis and indicates cortisol levels are affected by AS. Mexican culture identity and Spanish proficiency may be protective against cortisol elevations while American culture identity and English proficiency may promote cortisolemia. These findings can have serious implications for the Mexican American population as it experiences the projected growth.