

Stress Hormone Foreshadows Postpartum Depression in New Mothers

March 04, 2013

Women who receive strong social support from their families during pregnancy appear to be protected from sharp increases in a particular stress hormone, making them less likely to develop postpartum depression, according to a new study published in [Clinical Psychological Science](#), a journal of the [Association for Psychological Science](#).

“Now we have some clue as to how support might ‘get under the skin’ in pregnancy, dampening down a mother’s stress hormone, and thereby helping to reduce her risk for postpartum depression,” said Jennifer Hahn-Holbrook, a UCLA National Institute of Mental Health postdoctoral scholar in psychology and fellow at UCLA’s Institute of Society and Genetics, and lead author of the research.

The scientists recruited 210 pregnant women of different ethnicities and socioeconomic backgrounds, surveying them three times during pregnancy — at 19, 29, and 37 weeks — and eight weeks after giving birth. The women were asked in interviews about how much support they received from their families and from the father of the child, and about their symptoms of depression. In addition, blood samples from each participant were analyzed to assess levels of placental corticotropin-releasing hormone (pCRH), a stress hormone released from the placenta.

After taking factors such as age, education, and income into account, Hahn-Holbrook and her colleagues discovered that pregnant women who reported the greatest support from their families seemed to have relatively lower levels of depressive symptoms. They also had the least dramatic increases in pCRH and the lowest absolute levels of pCRH in the third trimester of pregnancy.

Additional analyses revealed that pCRH levels in the third trimester fully explained the relationship between family support in pregnancy and postpartum depression symptoms.

These results are consistent with the conclusion that social support protects against abnormal pCRH increases and that lower pCRH levels in turn reduce risk of postpartum depression.

“Our results, and those of other scientists, suggest that low or absent support is a significant risk factor for postpartum depression, and that strong support is a protective factor,” Hahn-Holbrook said.

Previous research has found that levels of pCRH typically increase during the third trimester of pregnancy. Women who exhibit the most dramatic increases in pCRH seem to show the most severe postpartum depression. Research has also shown that social support can dampen biological stress responses in women who are not pregnant. In the new study, Hahn-Holbrook and colleagues integrated these two strands of research, examining the interplay between a psychological factor, social support, and a biological factor, pCRH, in predicting postpartum depression.

“We investigated perceived support — the extent to which a mother felt she could count on her family and the baby’s father should she need them,” said Chris Dunkel Schetter, UCLA professor of psychology and co-author of the study. Social support, she added, entails many things, including help with “tasks or material assistance,” but also emotional support in the form of acceptance, listening and making someone feel cared for and valued.

“Emotional support seems to be the most powerful form of support that you can provide to someone, but it is difficult to do right,” Dunkel Schetter said.

While pregnant women who felt strong support from their families and from the child’s father had fewer depressive symptoms, there was no relationship between support from the father and levels of pCRH. Although father support was not as strong of a protective factor as family support in this study, “there is no doubt that fathers are a critical part of a healthy pregnancy,” Hahn-Holbrook said. It could be that support from the father influences pCRH levels earlier in pregnancy, or father support may act by a different biological or behavioral pathway altogether, Hahn Holbrook said.

“Mothers with support from fathers may be more likely to practice healthy behaviors, which has been shown to contribute both to healthier babies, better birth outcomes, and lower postpartum disturbance,” Dunkel Schetter added.

The study’s results suggest that the timing of support interventions is especially important.

“Because levels of pCRH in the last trimester contributed to postpartum depression, early social support interventions might protect against both elevated pCRH and depressive symptoms,” Dunkel Schetter said. “Too many interventions in the past have been mounted too late in pregnancy,” she added.

More research should be conducted to determine when, what, and how to provide the optimal support to mothers during pregnancy, according to Dunkel Schetter. Her laboratory is conducting further research in this area.

Sharp increases in pCRH over the course of pregnancy are associated with preterm births, defined as births earlier than 37 weeks of gestation. It is possible that social support or other stress reduction methods provided early in pregnancy could provide health benefits, and ultimately for the baby as well.

“Even better, would be to support and educate women before pregnancy to maximize healthy pregnancies” Dunkel Schetter noted.

Co-authors of the research are Chander Arora and Calvin Hobel from Cedars-Sinai Medical Center. This research was federally funded by the National Institute of Child Health and Human Development (HD29553; HD28413), a part of the National Institutes of Health.

For more about Dunkel Schetter’s research, visit <http://health.psych.ucla.edu/CDS/index.php>.