

Prenatal micronutrient supplementation and postpartum depressive symptoms in a pregnancy cohort

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Abstract

Background: Postpartum depression is a serious problem for women and their offspring. Micronutrient supplements are recommended for pregnant women because of their documented protective effects for the offspring, but their potential beneficial effects on maternal mental health are unknown. This study investigated the association between prenatal micronutrient supplementation and the risk for symptoms of postpartum depression in a longitudinal pregnancy cohort from the Alberta Pregnancy Outcomes and Nutrition (APrON) study.

Methods: Participants came from a cohort of the first 600 APrON women. Supplemental nutrient intake and symptoms of depression (measured with the Edinburgh Postnatal Depression Scale (EPDS)) were collected at each trimester and 12 weeks postpartum.

Results: Of the 475 participants who completed the EPDS at least twice in pregnancy and at 12 weeks postpartum, 416 (88%) scored <10 and 59 (12%) scored ≥ 10 , where an EPDS ≥ 10 is considered to be “at least probable minor depression”. Mean nutrient intakes from supplements were higher in women with lower EPDS scores,

particularly selenium ($p = 0.0015$) and omega-3s ($p = 0.01$). Bivariate analyses showed that several demographic and social/ lifestyle variables were associated with EPDS ≥ 10 : not having been born in Canada ($p = 0.01$), greater number of chronic conditions ($p = 0.05$), greater number of stressful life events during this pregnancy ($p = 0.02$), and lower prenatal and postnatal support ($p = 0.0043$ and $p = 0.0001$, respectively). Adjusting for covariates and nutrients known to be associated with postpartum depression, logistic regression showed that having a prenatal EPDS ≥ 10 increased the odds of postpartum depressive symptoms (second and third trimester OR = 3.29, 95% CI = 1.55 - 7.01, $p = 0.004$ and OR = 4.26, 95% CI = 2.05 - 8.85, $p < 0.0001$, respectively), while prenatal supplemental selenium (per 10 mcg, OR = 0.76, 95% CI = 0.74 - 0.78, $p = 0.0019$) and postnatal social support (OR = 0.87, 95% CI = 0.78 - 0.97, $p = 0.0015$) were protective.

Conclusions: Multiple factors, including supplementary selenium intake, are associated with the risk of postpartum depressive symptoms. Future research on dietary supplementation in pregnancy with special attention to selenium intake is warranted.

Keywords: Postpartum depression, Dietary supplements, Selenium, Omega-3