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Article *in* Current Developments in Nutrition · June 2019

DOI: 10.1093/cdn/nzz034.P10-112-19

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Is Iron Status Related to Psychosocial Wellbeing During Pregnancy? (P10-112-19)

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Objectives: To examine the associations between iron status, depressive symptoms, anxiety and quality of life (QoL) in 1st, 2nd and 3rd trimesters (TT) of pregnancy

Methods: A longitudinal study was conducted among pregnant women in Central Region of Ghana. Women were recruited in their 1st TT (<13 weeks; n = 118) and followed at their 2nd ($n = 73$) and 3rd ($n = 72$) TTs. Sociodemographic variables, food security (8-item version of US Household Food Security Survey Module), anxiety (Beck Anxiety Inventory; BAI), depressive symptoms (Center for Epidemiological Studies-Depression Inventory; CESD) and QoL (RAND SF-36), were collected. We determine hemoglobin (Hb) concentrations via Hemocue; ferritin (Ft) via ELISA; serum iron and total iron binding capacity via colorimetric methods and calculated transferrin saturation (TSAT). Stepwise regressions were run to determine predictors of psychosocial wellbeing and ANCOVA's for differences between iron status (ID = iron deficient; IS = iron sufficient) groups at each time point.

Results: Participants were 27.1 ± 5.2 years old. Prevalence of anemia (Hb < 11.0 g/dL) was 36%, 66%, 55%; ID (Ft < 12 mg/L) 12%, 18%, 28%; ID anemia 5%, 12%, 20%; depressive symptoms (CESD ≥16) 49%, 36%, 28%; anxiety symptoms (BAI ≥16) 35%, 11%, 2% and low QoL (SF-36 < 50) 31%, 14%, 35% for 1st, 2nd and 3rd TTs, respectively. In the 1st TT, an association between Ft and BAI scores (b = 3.38) and between Hb and CESD scores (b = -0.98) was found but no iron biomarkers were related to SF-36 scores. ID women (by Ft) had lower anxiety scores ($P < 0.01$) but higher depressive symptom scores ($P = 0.05$) than IS women; anemic women had higher depressive symptom scores than non anemic women ($P = 0.06$). At the 2nd TT, no iron biomarkers were related to BAI or CESD scores. Those who were ID (TSAT < 16%) had higher QoL scores than those who were IS ($P = 0.01$) although the n in the ID group was very small ($n = 6$).

Conclusions: ID is related to higher depressive symptoms but lower anxiety symptoms during the 1st TT. It may also be related to higher QoL during the 2nd TT although this finding should be interpreted with caution. Iron biomarkers did not relate to psychosocial wellbeing during the 3rd TT.

Funding Sources: College of Health and Human Development & Africana Research Center, Penn State; American Association of University Women.