Higher parity, pre-pregnancy BMI and rate of gestational weight gain are associated with gestational diabetes mellitus in food insecure women

ABSTRACT

Food insecurity may exacerbate adverse maternal health outcomes during pregnancy, however, this association has not been well established, particularly in the context of developing countries. This study aimed to identify the associations between household food insecurity and gestational diabetes mellitus (GDM) risk among urban pregnant women. Household food insecurity was assessed using the translated 10-item Radimer/Cornell hunger scale. Logistic regression models were used to estimate the associations between food insecurity status and GDM risk. About 35.6% of women experienced food insecurity, with 25.2% reported household food insecurity, 8.0% individual food insecurity, and 2.4% child hunger. Food insecure women were at significantly higher risk of developing GDM compared to food secure women (AOR = 16.65, 95% CI = 6.17–24.98). The significant association between food insecurity and GDM risk was influenced by pre-pregnancy BMI, parity and rate of GWG at second trimester. Food insecure women with parity ≥ 2 (AOR = 4.21, 95% CI = 1.98–8.92), overweight/obese BMI prior to pregnancy (AOR = 12.11, 95% CI = 6.09–24.10) and excessive rate of GWG in the second trimester (AOR = 9.66, 95% CI = 4.27–21.83) were significantly more likely to develop GDM compared to food secure women. Food insecurity showed strong association with GDM risk in that the association was influenced by maternal biological and physical characteristics. Multipronged interventions may be necessary for food insecure pregnant women who are not only at risk of overweight/obesity prior to pregnancy but also may have excessive gestational weight gain, in order to effectively reduce GDM risk.

Keyword: Hemoglobin; Hemoglobin change; Gestational diabetes mellitus; Pregnancy