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## Vitamin D deficiency in early pregnancy, diet and physical activity and development of gestational diabetes in Emirati women

Sharifa AlBlooshi  
Zayed University, UAE

**Introduction:** Vitamin D deficiency and Gestational Diabetes Mellitus (GDM) are common health problems among pregnant women in the Middle East region including the United Arab Emirates.

**Methods:** We conducted a prospective cohort study on 563 Emirati pregnant women who visited eight primary healthcare clinics for antenatal care. The primary exposure was vitamin D deficiency (25(OH) <12 ng/ml) and vitamin D insufficiency (25(OH) 12-20 ng/l). The outcome variable was GDM. The data on socio-demographic characteristics, personal and family medical history, physical activity, dietary intake and anthropometric indices were collected at baseline.

**Results:** Overall, 58.3% of pregnant women had vitamin D deficiency and 26.4% had insufficiency. The overall incidence of GDM was 15.2%. The incidence of GDM was 16% in vitamin D deficient women, 16.1% in vitamin D insufficient women and 10.7% in women with normal vitamin D. Adjusted logistic regression analysis showed that vitamin D concentration [AOR]: 0.99, 95% Confidence Interval [CI]: 0.95-1.02,  $p=0.450$ ), vitamin D insufficiency (AOR: 2.11, 95% CI: 0.81-5.64,  $p=0.101$ ) and deficiency (AOR: 1.94, 95% CI: 0.88-5.32,  $p=0.118$ ) were not associated with GDM. Low (AOR: 1.09, 95% CI: 0.43-2.79,  $p=0.850$ ) and moderate (AOR: 0.78, 95% CI: 0.45-1.34,  $p=0.372$ ) physical activity levels were not significantly associated with increased odds of GDM. The daily consumption of red meat and dates, family history of diabetes and Body Mass index (BMI) before pregnancy were significantly associated with GDM.

**Conclusion:** Vitamin D deficiency and physical activity were not associated with GDM, while daily intake of red meat and dates, increasing BMI before pregnancy and positive family history were positively associated with GDM. These findings are congruent with some previous studies in the Middle East region and elsewhere and provide guidelines to health stakeholders and healthcare providers for improving the screening, prevention and management of GDM in Emirati women.

### Biography

Sharifa AlBlooshi has completed her PhD from the United Arab Emirates University. She is working as an Assistant Professor at Natural and Health Sciences in Zayed University.

Sharifa\_ali\_hashem@hotmail.com

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