



جامعة الإمارات العربية المتحدة  
United Arab Emirates University

The College of Graduate Studies and the College of Medicine and Health  
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**PhD Dissertation Defense**

Entitled

Vitamin D Deficiency in Early Pregnancy, Diet and Physical Activity and  
Development of Gestational Diabetes in Emirati Women

by

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Date & Venue

11:15 AM

Sunday, 01 October 2017

Room 2C-021, Fatima Theater, CMHS Building

Abstract

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. The main aim of this thesis is to investigate the association between vitamin D status and the risk of development of GDM in early pregnancy in Emirati women. 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. Data on socio-demographic characteristics, medical history, physical activity, dietary intake, and anthropometric indices were collected at baseline. At baseline 58% (resp. 26%) of pregnant women were vitamin D deficient (resp. insufficient). The overall incidence of GDM was 15.2% (10.7% in normal vitamin D status, 16.1% in Vitamin D-insufficiency and 16% in vitamin D-deficiency groups). Adjusted logistic regression analysis showed that vitamin D insufficiency (OR: 2.11, 95%CI: 0.81 – 5.64, p=0.101) and deficiency (OR: 1.94, 95%CI: 0.88 – 5.32, p=0.118) were not associated with GDM. 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 BMI before pregnancy were significantly associated with GDM. 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.

**Keywords:** Gestational Diabetes (GDM), Vitamin D deficiency, Vitamin D insufficiency, Physical Activity, Diet, Family History of Diabetes, Body Mass Index.