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**PhD Dissertation Defense**

Entitled

*GESTATIONAL DIABETES MELLITUS SCREENING, DIAGNOSIS, AND KNOWLEDGE IN THE UNITED ARAB  
EMIRATES*

by

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Date & Venue

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Abstract

*Introduction:* Gestational Diabetes Mellitus (GDM) is a major public health problem with short- and long-term consequences affecting mothers and children. In the UAE, 1 in 4 pregnancies are affected by GDM. This dissertation aims to explore GDM diagnostic criteria, doctors' practices regarding its screening, diagnosis and guidelines use, as well as its knowledge to provide a basis for all levels of prevention in GDM care in the UAE.

*Methods:* To achieve the research objectives, 3 studies were conducted. 1) "Gestational Diabetes Mellitus Diagnostic Criteria Use Among Emirati Mothers in United Arab Emirates: The Mutaba'ah Study", 2) "GDM Screening and Diagnosis: An Update of Current Practice among Medical Doctors in the UAE", 3) "Gestational Diabetes Mellitus Knowledge and Associated Factors among University Students in the United Arab Emirates". A combination of prospective cohort, retrospective cohort and cross-sectional studies were used to address the different research questions in the three studies.

*Results:* 2546 pregnant women were included in the first study, 121 medical doctors in the second study, and 735 UAE University students in the third study. In the first study, the researcher found that the NICE 2015 and the IADPSG criteria were the most inclusive for GDM diagnosis in this population. The IADPSG criteria were found to be the best predictor for large for gestational age baby (LGA) (aOR 1.77, 95% CI 1.36 - 2.29) and composite outcome (aOR 1.49, 95% CI 1.19 - 1.86). Another key finding is that using the new RCOG COVID-19 criteria only diagnosed 7.5% of GDM cases and missed up to 80% of cases identified by other criteria. From the second study, medical doctors' practices regarding GDM screening diagnosis and guidelines use were found to be sub-optimal. Place of specialization ( $p=0.013$ ), practicing hospital ( $p=0.011$ ), and doctor's specialty ( $p=0.003$ ) were associated with doctors' correct use of GDM diagnostic criteria. The third study on GDM knowledge showed that more than one-quarter of the university students had never heard of it before. Up to 52.3% of the male students never heard of GDM. This was especially true among younger male students ( $p=0.019$ ) and undergraduates ( $p=0.026$ ). Among students who have heard of GDM, 1 in 4 had poor knowledge.

*Significant contributions:* Using the study data, the researcher developed a new GDM diagnostic criteria proposed for use in the Emirati population using the prediction of adverse perinatal outcomes. The newly proposed "Emirates 2022" GDM diagnostic criteria are defined by fasting plasma glucose (FPG) of  $\geq 6.0$  mmol/L and/or 1-h OGTT  $\geq 10.0$  mmol/L and/or 2-h OGTT  $\geq 8.5$  mmol/L.

*Gaps filled:* This research contributes to the global conversation on the unification of GDM screening and diagnosis. It is the first research in the MENA region to develop evidence-based GDM diagnostic criteria and the first to assess the impact of using the new RCOG COVID-19 GDM diagnostic criteria on GDM incidence in the region. It shows an update on doctors' GDM practices in the UAE after the publication of the HAAD GDM guideline, a decade ago. It is also the first to report GDM knowledge status and levels of university students in the MENA region and the first in the region to include males in this assessment. A multi-sectoral approach is needed to ensure the translation of this research into practice.

**Keywords:** gestational diabetes mellitus, GDM, diagnostic criteria, GDM screening, adverse perinatal outcomes, doctors' practice, GDM knowledge