

Prevalence and Risk Factors of Gestational Diabetes Mellitus in Malaysian Antenatal Mothers in North-East Peninsular Malaysia, A Retrospective, Cross-Sectional Study

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ABSTRACT

Background: Gestational diabetes mellitus (GDM) has a negative impact on prenatal and neonatal outcomes and is a public health concern. The study aims to determine the prevalence of gestational diabetes in Malaysian antenatal mothers and identify risk factors associated with its incidence at one tertiary teaching hospital in Kelantan, Malaysia. **Methods:** A retrospective cross-sectional study collected data from antenatal mothers between 24 and 28 weeks of gestation diagnosed with GDM based on the International Association of Diabetes and Pregnancy Study Groups criteria between January and February 2021. Eighty-nine antenatal mothers were screened. **Results:** The mean age of the participants was 32 years (SD = 5.8). GDM prevalence was 33.7%, and having a history of GDM was significantly associated with prevalence ($p = 0.016$). Chi-square analysis revealed that Kelantanese prenatal mothers with risk factors, particularly those who had previously had GDM, had a significant prevalence of GDM. **Conclusion:** Hence, population health programs and strategies are required are urgently required to reduce risk and improve the health of future antenatal mothers.

Keywords: Gestational Diabetes Mellitus; Antenatal Mothers; Prevalence; Risk Factors; Kelantan

INTRODUCTION

Gestational Diabetes Mellitus (GDM) is a pregnancy-related illness characterized by hyperglycemia and glucose intolerance that is usually associated with an elevated risk of perinatal death and morbidity (DeFronzo *et al.*, 2015; Erem *et al.*, 2015). A GDM woman is six times more likely to develop type 2 diabetes mellitus (DM), hypertension, infections, and pre-eclampsia after giving birth (Gracelyn & Saranya, 2016; Zhu & Zhang, 2016). Hence, this demands early detection, diagnosis, and management of GDM by obstetricians, including nurses and midwives, to provide a coherent care pathway to ensure preventive care, minimizing problems during and after pregnancy for the mother and her unborn child (Mensah *et al.*, 2019).

The prevalence of GDM is still being investigated, which may be due to research findings that do not apply to the general population, which may result in a lack of uniformity in GDM diagnostic criteria or the fact that the trends of GDM prevalence are not yet stable (dos Santos *et al.*, 2020; Egbe *et al.*, 2018). The prevalence of GDM ranges from 1% to 28%, depending on factors such as genetic history, the studied population, the environment in which the population lives, and the lack of consistency in international guidelines for diagnosing GDM (Onyenekwe *et al.*, 2019; Egbe *et al.*, 2018; Debnath *et al.*, 2018; Ali *et al.*, 2016). However, many studies have concluded that GDM prevalence has increased globally (Versteegen *et al.*, 2021; Logakodie *et al.*, 2017).

Malaysia had the highest prevalence of GDM (18.3%) among Southeast Asian countries, followed by India (13.6%), Bangladesh (9.7%), and Sri Lanka (8.1%) (Zhu & Zhang, 2016). Furthermore, a 2019 Malaysian study found that the prevalence of GDM in Malaysia is higher than in most Western countries, ranging from 11.4% to 18.3% in a university hospital and a public health clinic in Selangor (Hassan *et al.*, 2019). GDM's cause is currently unknown. GDM, on the other hand, may occur due to maternal pregnancy adaptation (DeFronzo *et al.*, 2015).

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