**Abstract Title:**

**Gestational Diabetes Mellitus and Perinatal Outcomes in Indigenous Populations: A Systematic Review and Meta-analysis**

**Abstract**

***Aim***: To synthesize the association between gestational diabetes mellitus (GDM) and adverse pregnancy outcomes among Indigenous populations globally.

***Method***: A comprehensive search was conducted across five databases to identify relevant studies. Pooled risk ratios were calculated using a random-effects model. Influence analysis, subgroup analysis, and sensitivity analysis were performed to assess study heterogeneity and individual study influence. Methodological quality was assessed using the Newcastle-Ottawa Scale, while the CONSIDER Statement was applied to evaluate the completeness of reporting in studies involving Indigenous populations.

***Results:*** Twenty studies were included in systematic review and meta-analysis. Pregnant women with GDM were at increased risk of caesarean section (risk ratio 1.83, 95% confidence interval 1.63–2.06; 95% prediction interval 1.40–2.39) and shoulder dystocia (3.21, 2.94–3.50; 2.63–3.92). Compared to infants of non-GDM pregnancies, those born to mothers with GDM had a higher risk of large for gestational age (2.35, 1.46–3.77; 0.64–8.65), macrosomia (1.75, 1.48–2.07; 0.95–3.22), preterm birth (1.36, 1.09–1.69; 0.77–2.38), and hypoglycaemia (8.17, 4.39–15.22; 0.68–98.66). However, they had a lower risk of low birth weight (0.80, 0.69–0.91; 0.59–1.08) and being small for gestational age (0.44, 0.39–0.50; 0.17–1.14). Four studies were classified as having a low or medium risk of bias, and 25% of studies made at least one reference to the involvement of Indigenous peoples over the course of their research.

***Conclusions:*** This study explored the variation in outcomes within Indigenous populations globally. The findings underscore the need for culturally appropriate early GDM management and further research should focus on strong Indigenous leadership and participation in all stages of the research process, to address the health disparities affecting this population.