

**TITLE:** Neuro-motor development in offspring of mothers with Gestational Diabetes Mellitus and those of mothers without Gestational Diabetes Mellitus.

**DEPARTMENT:** Community Medicine

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**DEGREE & SUBJECT:** M.D. in the branch of XV (Community Medicine)

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**OBJECTIVES:** To assess whether Gestational Diabetes Mellitus was associated with higher risk of neuro-motor developmental delay or psychosocial problems in the offspring at 3-5 yr of age, and to determine the other risk factors associated with it.

**METHODS:** A historical cohort study was carried out on children born to women who were screened for Gestational Diabetes Mellitus at a Secondary care hospital in Southern India between March 2011 and February 2013. The children who participated were divided into the exposed group (born to GDM mothers, n=96) and unexposed group (born to non GDM mothers, n=102). They were all assessed for neuro-motor developmental delay using Ages and Stages Questionnaire-3 and for psychosocial problem by the Strengths and Difficulties Questionnaire. Various other factors including antenatal, intrapartum, childhood and anthropometric risk factors for developmental delay were assessed using multivariate analysis.

RESULTS: The cumulative incidence (95% CI) of overall psychosocial problems among the study participants who were exposed to GDM was found to be 7.3 (3.6-14.9) per 100 children and among those unexposed was 4.9 (2.1-11.5) per 100 children with an RR of 1.22 and a 95% CI of 0.74 – 2.01 and the excess risk of 22% observed in the exposed group was not statistically significant. However, significantly higher odds of fine motor domain delay (OR=2.22 (95%CI 1.09-5.95), p-value= 0.020) and problem solving domain delay (OR = 2.60 (95%CI 1.19-5.69), p-value=0.014) in children born of a GDM complicated pregnancy. Significantly higher odds of neuro-motor developmental delay was seen in children born to teenage mothers (OR = 6.98 (95% CI 1.14-42.82), p-value=0.036, and those born to mothers who had high risk pregnancies (OR = 3.55 (1.53 – 8.19), p-value = 0.003)

#### CONCLUSION:

Although increased odds of problem solving delay in offsprings of GDM mothers has not been identified in earlier studies, the association of fine motor delay with GDM in mothers is a recurrent finding in studies done over many years. Children of teenage mothers and women with high risk pregnancies have higher risk of having neuromotor developmental delay.