

## CORRELATION BETWEEN MATERNAL COMPLICATIONS AND THE MENTAL HEALTH OF THE OFFSPRING

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### INTRODUCTION

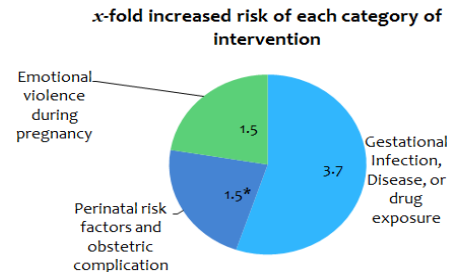
Children and young adults with mental disorders are two times as likely to have experienced a complication of birth or pregnancy [1]. Although a large amount of existing research provides sufficient evidence to show that maternal prenatal complications do cause an increased risk for the child to be born with mental disorders, not many studies have looked into the quantitative impact that such a factor can have on child and adolescent health. Using an informatics approach, this study tries to examine this very impact on the mental health of the youth in the local pediatric population (Calgary Research Ethics Board ID: 21695).

### METHODS

A data set containing physician visit for approximately 240,000 unique individuals from 1994-2009 was employed to examine the type of mental disorder associated with complications of birth and pregnancy – as a major class of ICD (International Classification of Diseases). Additionally, a systematic literature review and meta-analysis of pediatric mental disorder associated with maternal pregnancy complications was undertaken. The systematic review involved obtaining and compiling data from 15 particular studies [2-16] conducted in different regions of the world and classifying the maternal complications in these studies into 3 main categories (Figure 1).

### RESULTS

Mothers who experienced gestational infection, disease or exposure to drugs had a 3.7-fold increased risk of giving birth to children with mental disorders. Perinatal risk factors and obstetric complications caused a 1.5-fold increased risk. Emotional violence during pregnancy correlated with premature birth. A Forest plot (which compared standardized values of the impact that each maternal complication caused on child mental health), revealed that gestational diabetes and gestational influenza were the leading risk factors for child mental disorders. In the local pediatric population from 1994 to 2009, the prevalence of offspring born with mental disorders whose mothers experienced complications during pregnancy and childbirth increased from 18 individuals/1000 to 28 individuals/1000 - an increase by 1.4.



**Figure 1.** The main categories of complications during birth and pregnancy and their corresponding impact on child mental health in x-fold increments.

### DISCUSSION AND CONCLUSIONS

A future direction for this area of research would be to ask the question of whether it is solely the influenza that impacts the child's mental health, or the antibiotic medication that most mothers are prescribed as a remedy for influenza that has the negative impact on the child's mental health. On average, maternal gestational infection, disease and drug exposure, perinatal risk factors and obstetric complications, and maternal emotional violence leads to a 2 fold increased risk of offspring being born with mental disorders. In the local population, the prevalence of mental disorders consequent to pregnancy and childbirth complications has increased by a factor of 1.4 during the 1994-2009 period in the Under 19 category.

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