Tobacco Use And Gestational Diabetes Among Iowa Women: Trends Over Time

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What is Diabetes?

- A group of diseases characterized by high levels of blood glucose (blood sugar)
- Can lead to serious health problems & premature death

Women and Diabetes

- Nationally, ~1.85 million women of reproductive age (18-44 years) have diabetes; ~500,000 are unaware they have the disease.

- Women of minority racial and ethnic origins are 2-3 times more likely to have Type 2 Diabetes.

- Type 2 Diabetes accounts for most diabetes cases identified during this life stage.

- Nationally, women of reproductive-age with Type 2 Diabetes have fewer years of education, lower incomes, and less likely to be employed.

- Between 2.5 - 4% of women in the U.S. develop GDM during pregnancy.
Gestational Diabetes Mellitus (GDM)

- 7% of all U.S. pregnancies, about 200,000 cases annually

- Increased lifelong risk for mother & child for developing Type 2 Diabetes

- Although women with GDM can & do have normal, healthy pregnancies & deliveries, are at greater risk for complications (e.g., preeclampsia, Cesarean section, infections)

- Increasing numbers of women, especially nonwhite women, at risk of having pregnancies complicated by diabetes

Various risk factors associated with higher rates of chronic diseases, including diabetes

GDM has been defined as the most common medical complication of pregnancy; affects about 4% of pregnant women each year

Women diagnosed with GDM have a significant risk of developing diabetes later in life
GDM: Consequences

- Pregnancy hormones block the action of the mother's insulin

- Insulin is hormone needed to bring blood glucose into the body’s cells for energy

- When insulin not working properly, blood glucose rises in the mother & can transfer to the fetus

- Fetus stores the extra glucose as fat

- Women with GDM have < 45% risk of recurrence with the next pregnancy & < 63% risk of developing Type 2 Diabetes later in life
GDM: Consequences

- Can be serious if not controlled
- Usually goes away after the baby is born, but may persist
- Important that a doctor checks the mother’s blood glucose 6 weeks after the baby is born
- Diabetes is a serious disease that can affect the heart, eyes, kidneys, nerves, & feet
- Children of women who have had GDM may be at higher risk for weight gain or getting diabetes during teenage years
Tobacco use may increase the risk of GDM; even a modest association with GDM among Iowa women of childbearing age would be of public health importance.

Without continued monitoring of these factors, the Iowa Department of Public Health (IDPH) would have difficulty tracking & evaluating progress toward accomplishing state objectives, such as decrease in prevalence of GDM.

Monitoring risk factors is vital to developing targeted education & prevention programs at state & local levels to improve health of pregnant women.
Objective

Current study examines various risk factors for development of GDM, including tobacco use and socio-economic status.
Methods

- Using Behavioral Risk Factor Surveillance System (BRFSS) data 1996 - 2006, determined the prevalence of concurrent tobacco use among Iowa women by pregnancy status.

- Trend in prevalence rate of self-reported GDM determined.
Results
Trends in Gestational Diabetes Mellitus among Iowa Women by Year*

* Self-reported among all Iowa women
Trends in Current Tobacco Use among Iowans by Year
## Association of Diabetes Diagnosis & Current Tobacco Use among Iowa Adult Women

**Association of Diabetes Diagnosis & Current Tobacco Use among Iowa Adult Women**(1996-2006) *(N = 28,380)*

<table>
<thead>
<tr>
<th>Ever told by dr. have diabetes</th>
<th>Current Tobacco Use (everyday or some days)</th>
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<tbody>
<tr>
<td></td>
<td>No (%)</td>
</tr>
<tr>
<td>Yes (%)</td>
<td>84.5</td>
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<tr>
<td>Yes, woman told during pregnancy (%)</td>
<td>75.2</td>
</tr>
<tr>
<td>No (%)</td>
<td>78.1</td>
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<tr>
<td>No, pre-diabetic or borderline diabetic (%)</td>
<td>88.9</td>
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</tbody>
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**p \leq .001**
Decreasing trends over time in tobacco use among adult Iowans

Increasing prevalence rate in GDM among Iowa women

Significant association between current tobacco use and GDM among Iowa women

Those with GDM more likely to currently use tobacco than Iowans with other diabetic diagnoses

Need for targeted education and prevention programs at state- & local-level to improve health of pregnant Iowa women