Income Growth Trajectory For Parents Of Children With Down Syndrome In The United States

Citation

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Accessibility
Background

• The non-invasive prenatal screening (NIPT) test, available as of October 2011, allows couples to learn whether their fetus has Down syndrome (DS) as early as 9 weeks into gestation.

• Given the availability of this test, more couples are expected to receive a diagnosis of DS.

• Upon receiving a positive DS diagnosis, expectant parents must make decisions about their pregnancy options with limited time and information.

• Some couples may be concerned about the financial impact of raising a child with DS.

• Costs include both direct costs, such as paying for care, and indirect costs, such as the potential impact of having to care for the child, on career progression and other aspects of life.

• Previous research has examined the impact of having a child on parental earnings. To our knowledge, no research has examined the differential impact on income growth trajectory of parents of children with DS as compared to parents of children without any chromosome abnormality.

Study Objective

To determine whether the rate of income growth among parents of children with DS differs from that among parents of children without chromosome conditions.

Methods

Data

• Data from the Openhelix Researching and Insights employer-based claims database were used in this retrospective cohort study.

• The database contains administrative claims (medical and pharmacy claims) and eligibility information for over 18 million enrolled lives. This database is insured through their employers, including primary subscribers and their covered beneficiaries.

• Data are drawn from claims filled during the calendar year 2015 and have been linked to demographic data from the 2014 US Census.

• A quarter of this data has been linked to more recently published records.

Selection Criteria

• Parents were selected to be included in the study if they were enrolled in their family’s insurance plan as a plan subscriber, had at least one child (0–18 years of age) on their insurance plan, had ≥2 years of continuous enrollment in the database during the study period, and had demographic data and enrollment characteristics used in the matching algorithm.

• DS-study group parents of a child ≤18 years of age diagnosed with a diagnosis code (ICD-9-CM code: 758.0x) for DS.

• Control group: parents of one or more children, all of whom had no diagnosis code for DS or any chromosome abnormality.

Observation Time

• A panel of pairs of consecutive years of parents’ income information was created.

• Parents in the control group with multiple children were included multiple times within the panel.

• The study period was 1997–2015 for the DS study group and 1997–2014 for the control group.

• Parents of children with DS who may not have received a DS diagnosis code on an insurance claim and thus are not included in the DS study group likely represent parents of relatively healthier children with DS, as doctors did not adjust for these characteristics in the analysis.

• Limitations of the study include confounding, selection bias, and/or measurement error.

Table 1. Baseline Characteristics of Parents in DS Study and Control Panels

<table>
<thead>
<tr>
<th>Baseline Characteristic</th>
<th>DS Study Panel</th>
<th>Control Panel</th>
<th>Difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual mean age of child (years), mean (SD)</td>
<td>7.9 (4.6)</td>
<td>7.9 (4.6)</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Gender (M/F)</td>
<td>20,812 (93.4%)/1,250 (6.6%)</td>
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<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Race</td>
<td>White 18,241 (80.6%), Black 2,200 (9.7%), Hispanic 1,670 (7.4%), Other 641 (2.8%)</td>
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<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>In from what part of the country was the child’s birth?</td>
<td>Northeast 2,615 (11.4%); Midwest 4,614 (21.4%), West 4,614 (21.4%)</td>
<td>Northeast 2,619 (11.8%); Midwest 4,614 (21.4%), West 4,614 (21.4%)</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Parent’s education</td>
<td>Some college or associate degree 19,719 (85.4%), Bachelor’s degree or higher 3,083 (13.6%)</td>
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<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Parent’s occupation</td>
<td>Full-time 17,062 (75.0%), Part-time 4,298 (19.4%)</td>
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<td>0.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 2. Mean Annual Growth Rates in Income Among Parents of Children with DS and Controls

<table>
<thead>
<tr>
<th>Year</th>
<th>DS Study Panel</th>
<th>Control Panel</th>
<th>Difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0+ years</td>
<td>3.9%</td>
<td>4.0%</td>
<td>-0.07%</td>
<td>0.070</td>
</tr>
<tr>
<td>3+ years</td>
<td>3.6%</td>
<td>3.7%</td>
<td>-0.11%</td>
<td>0.150</td>
</tr>
<tr>
<td>6+ years</td>
<td>3.9%</td>
<td>4.0%</td>
<td>-0.07%</td>
<td>0.078</td>
</tr>
</tbody>
</table>

Discussion

• The impact on income growth is a part of the financial consideration for parents receiving a prenatal diagnosis of DS.

• Parents of children with DS who have lower mean annual income growth rate than their matched controls (6.5% vs. 4.1%), though statistically significant, was small (3.4%).

• No significant statistical differences existed in mean annual income growth rate when analyzed separately for mothers (4.0% vs. 4.3%) and fathers (4.2% vs. 3.8%).

• In Table 2, average annual income growth for parents with DS was lower than that of parents without DS for both daughters and sons. This difference was not statistically significant among mothers and fathers when analyzed separately.

• The mean annual income growth rate was lower for parents of children with DS compared to parents of children without DS.

• Previous studies have shown that having a child affects mothers’ salaries differently than fathers’. Our study did not test for an interaction between having a child with DS and parents’ gender, but further research is warranted.

• Further research is warranted to determine whether the impact of having a child with DS on parents’ incomes differs with the age of the child.

• No statistically significant differences existed in mean annual income growth rate when analyzed separately for mothers (4.0% vs. 4.3%) and fathers (4.2% vs. 3.8%).

• The potential impact on income growth is a part of the financial consideration for parents receiving a prenatal DS diagnosis code on an insurance claim and thus are not included in the DS-study group in the matched panel study.

• The current study examined the impact of having a child with DS on parents’ incomes in the US. The findings cannot be generalized to other income growth trajectories.

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