School Start Time Research

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What are the academic and recommended sleep impacts of changing start times?
Why answer this research question?
Existing Research

• There have been several studies that show a link between school start times and health outcomes.
  • Minges & Redker (2016)
  • Bowers & Mower, (2016)
  • Wahlstrom & Owens (2017)

• Few studies have shown the academic impact of delaying school start times
  • Dupuis (2015)
  • Sabia et al. (2017)

Need for more academic impact and Minnesota specific research
Who were the partners in this research?
Research Partners

Dr. Michael Rodriguez

BLOOMINGTON
Public Schools

Dr. David Heistad
Dr. Julio Caesar
Rik Lamm (UofM Doctoral student)
What data were analyzed to answer this research question?
Since 1989, the Minnesota Student Survey (MSS) has been administered every three years.

In 2019, over 81 percent of regular public school districts chose to participate in the survey.

Students in grades 5, 8, 9 and 11 are surveyed.
How would you describe your grades this school year?
   a. Mostly As
   b. Mostly Bs
   c. Mostly Cs
   d. Mostly Ds
   e. Mostly Fs
   f. Mostly Incompletes
   g. None of these letter grades

During a typical school night, how many hours of sleep do you get?
   a. 4 hours or less
   b. 5 hours
   c. 6 hours
   d. 7 hours
   e. 8 hours
   f. 9 hours
   g. 10 or more hours
How were the student responses to these questions used?
Districts that Changed Start Times

**SST Change**
- Responses before Start Time Change 2016
- Responses after the Start Time Change 2019

**Control**
- Responses from 2016 administration
- Responses from 2019 administration
Research Methodology

• Identified districts that changed their start times between 2016 and 2019

• Four districts were selected

• Another four districts were identified as the control group

• All 8 districts had similar proportions of demographic variables
Regression analysis was performed with the demographic variables, year, grade, and treatment group predicting GPA to determine the effect of delaying start times on academic outcomes.

Logistic regression was performed to predict the probability of students meeting the recommended amount of sleep using the same variables.
Findings
Findings

- Students did report longer sleep times in the delayed start time districts

- There are academic benefits to delaying school start times beyond the health implications
  - The effects are somewhat small
## Findings

<table>
<thead>
<tr>
<th>Group</th>
<th>Grade</th>
<th>Difference Between District Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in probability of</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>27%</td>
</tr>
<tr>
<td>getting recommended amount of</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10%</td>
</tr>
<tr>
<td>sleep</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>4%</td>
</tr>
<tr>
<td>Increase in GPA points</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>0.13</td>
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<tr>
<td></td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>0.11</td>
</tr>
</tbody>
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Next Steps
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- Next MSS administration is in 2022
  - Examine longitudinal effects of changing start times
- Approach one or more of the four districts for insights and additional information
End