More than Just Brushing

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Civil Engineering 2016
Overview

- “Teeth don’t decay in a vacuum” – Dr. Sinton

- Social determinants of oral health

- Improving the oral health of the community
Background

- Social Determinants of health
  - Looking into indirect causes of disease
Background

- Oral Health
  - General proxy for overall health
  - Not covered my OHIP
Background

- Existing Literature
  - Generally suggests a link between income and oral health
  - Identified more reactive based care

- Different jurisdictions
Sample

- 1213 valid students
  - January 1 2011 - January 1 2012
  - Kindergarten students in Brant County schools
  - Data collected by Brant County Health Unit Staff
  - Demographic data was obtained from the 2006 Canadian Census
Methodology

- Analysis with the Brant County Health Unit Epidemiologist, Adam Stevens
- Records were combined with the 2006 census at the postal code level
- Results analysed using an ANOVA test at the $\alpha=0.05$, followed by a Tukey post-hoc test
Figure 1
Percentage Increase/Decrease in rate from Lowest risk to Highest risk groups by Decay Type
Brant Senior Kindergarten 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Untreated Decay</th>
<th>Treated Decay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lone Parent Families</td>
<td>22.04%</td>
<td>16.19%</td>
</tr>
<tr>
<td>Number of rooms per dwelling</td>
<td>-4.83%</td>
<td>-2.74%</td>
</tr>
<tr>
<td>Rent home</td>
<td>43.21%</td>
<td>27.37%</td>
</tr>
<tr>
<td>Receiving government transfers</td>
<td>Not Sig.</td>
<td>10.87%</td>
</tr>
<tr>
<td>&gt;30% of income on housing</td>
<td>42.10%</td>
<td>38.94%</td>
</tr>
<tr>
<td>Certificate, diploma, degree</td>
<td>-6.37%</td>
<td>-4.75%</td>
</tr>
<tr>
<td>Post Secondary Education</td>
<td>Not Sig.</td>
<td>-2.68%</td>
</tr>
<tr>
<td>Household Income</td>
<td>-8.86%</td>
<td>-4.55%</td>
</tr>
</tbody>
</table>
Figure 2

Social Determinants by Categories of Smooth Surface Decay
Brant Senior Kindergarten 2011

<table>
<thead>
<tr>
<th>Smooth Surface Decay Category (Number of Teeth)</th>
<th>d=0</th>
<th>d=1</th>
<th>d≥2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate, diploma, degree</td>
<td>73.31</td>
<td>70.63</td>
<td>68.90</td>
</tr>
<tr>
<td>Rent home</td>
<td>19.18</td>
<td>25.71</td>
<td>27.48</td>
</tr>
<tr>
<td>Lone Parent Families</td>
<td>15.16</td>
<td>16.89</td>
<td>21.41</td>
</tr>
<tr>
<td>Receiving government transfer payments</td>
<td>11.25</td>
<td>11.53</td>
<td>14.23</td>
</tr>
</tbody>
</table>
Figure 4

Social Determinants by Categories of Decay for Treated and Untreated Teeth
Brant Senior Kindergarten 2011

Solid lines indicate treated decay

Broken lines indicate untreated

Legend:
- Certificate, diploma, degree
- Post Secondary Education
- Rent home
- Lone Parent Families
- Receiving government transfer payments
- Household spending

Percentage of households

Decay Category (Number of Teeth)
Figure 5

Social Determinants by categories of debt
Brant Senior Kindergarten 2011

<table>
<thead>
<tr>
<th></th>
<th>d=0</th>
<th>d=1</th>
<th>d≥2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent home</td>
<td>17.08</td>
<td>23.20</td>
<td>24.47</td>
</tr>
<tr>
<td>Lone Parent Families</td>
<td>14.41</td>
<td>15.69</td>
<td>17.71</td>
</tr>
<tr>
<td>Receiving government transfer payments</td>
<td>10.88</td>
<td>11.54</td>
<td>12.43</td>
</tr>
<tr>
<td>Household spending 30% or more of gross income on housing costs</td>
<td>6.66</td>
<td>9.78</td>
<td>10.31</td>
</tr>
</tbody>
</table>

debt Category (Number of Teeth)
Conclusions

- Generally agreed with the hypothesis
- Insurance
- Smooth surface decay
- Housing
Applications

- Identifying and addressing social causes can be a very effective way of improving the health of a population

- Continue to study the relationship between insurance access and utilisation

- Focus resources on educating target populations on the importance of preventative care

- Focus on areas of the city where housing makes up a significant proportion of household expenses
  - As opposed to simply lower income areas