Hidden Links: The Relationship Between Autism Spectrum Disorder, Socioeconomic Status, and Dental Care Outcomes

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1 in 72 diagnosed in Colorado2
1 in 59 children diagnosed with Autism Spectrum Disorder (ASD) in the US3

Research Questions
Is oral health influenced by ASD diagnosis and/or socioeconomic status?
Is behavior during a dental visit influenced by ASD diagnosis and/or socioeconomic status?

Methods
• Retrospective study with data collected between May 1, 2016 and April 26, 2018 from the Dental Center at Children’s Hospital Colorado

Study Subjects

Data Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
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<tbody>
<tr>
<td>Dental Electronic Medical Records (AxiUm)</td>
<td>CHCO Electronic Medical Records (EPIC)</td>
</tr>
<tr>
<td>Socioeconomic status (SES)</td>
<td>Zip code and insurance provider</td>
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<tr>
<td>Frankl score* (measure of behavior)</td>
<td>1↓: interfering behavior</td>
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<tr>
<td>Caries risk score† (measure of oral health)</td>
<td>1=Low Caries Risk score =↓↓ risk for poor oral health</td>
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Outcomes

• Risk of caries among pediatric dental patients is driven by levels of family income, and not by whether the patient has ASD diagnosis or not.

↓SES = ↑Caries Risk
ASD Diagnosis ≠ ↑Caries Risk

Limitations
• Level of severity of patient’s ASD unknown
• ASD diagnoses are provider report, not a confirmatory assessment
• SES based on zip code, government data reports which is a rough estimate
• Zip codes provided for patients may not be their actual residence
• Subjects selected only from Pediatric Dental Care at Children’s Hospital, so not representative of the general population and prone to selection bias
• Subject to confounding (other risk factors may be present that were not measured)

Implications/Further Research
• Lower SES puts patients at risk for poorer oral health regardless of diagnosis
  • How can we improve access to dental care for lower SES families at CHCO?
• An Autism diagnosis is correlated with more challenging behavior
  • Does the severity of the Autism diagnosis affect the prevalence of interfering behavior?
• Do lower Frankl scores predict poorer oral health outcomes?

Acknowledgements
Joe Beling, Ambulatory Operations Manager, Department of Pediatric Dentistry for his assistance with data management

Conclusions

Pediatric patients whose families have low SES are 32% more likely to have a higher risk of caries than those with high SES regardless of ASD diagnosis (OR = 1.32; 95% CI = 1.129 to 1.544).

Pediatric patients with ASD are 4 times less likely to exhibit non-interfering behavior during a dental visit than those patients without ASD regardless of SES (OR = 5.08; 95% CI = 3.911 to 6.605).