# Age of First Dental Visit Among Children with and without Special Health Care Needs

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## Introduction

Children with special health care needs present unique challenges to healthcare providers.[1] From a dental perspective, children with special needs often exhibit anxiety, fear, or combativeness during treatment.[2] These behavioral barriers, in addition to suboptimal access to quality oral health care, may contribute to delays in comprehensive dental care-[3,4,5] including the age of a child's first dental visit.

This delay impedes routine oral care, as well as the ability to verbalize symptoms of dental pain and discomfort. In situations of daily defiance, aggression, or resistance toward oral hygiene practices, primary caregivers may choose to forgo an official dental visit due to anticipated combativeness or uncontrollable conduct from the child.

While CSHCN share oral health problems like those of healthy children- such as poor oral hygiene, dental caries, and malocclusion- this study hypothesizes that there will be a significant difference in the mean age of initial presentation between these two groups.

## Methods

**Design: Retrospective Cohort**

**Patients:** Patients <18 years of age at the time of presentation to EIOH's pediatric dental clinic from January 1, 2018 to December 1, 2022. Patients will be defined as "Special Needs" if they have Autism, Cerebral Palsy, Cystic Fibrosis, Down Syndrome, Epilepsy, Fragile X Disease, Feeding Tube, Learning Problems, Pervasive Development Disorder, Sickle Cell Trait, Spina Bifida, Sickle Cell Disease, and Traumatic Brain Injury. Exclusion criteria included patients 18 years old or older, missing information regarding special needs diagnosis, missing demographic data, and incomplete axiUm records.

**Statistics:** Power analysis determined sample size will be 200 patients (100 in each cohort). Chi-Squared, Fisher's exact tests, t tests, and multiple linear regression analysis will be used. All tests will be conducted at a 2-sided alpha level of 0.05 and all confidence intervals will be given at a 2-sided 95% level.

## Results





**Table 1: Special Needs Status by Race**
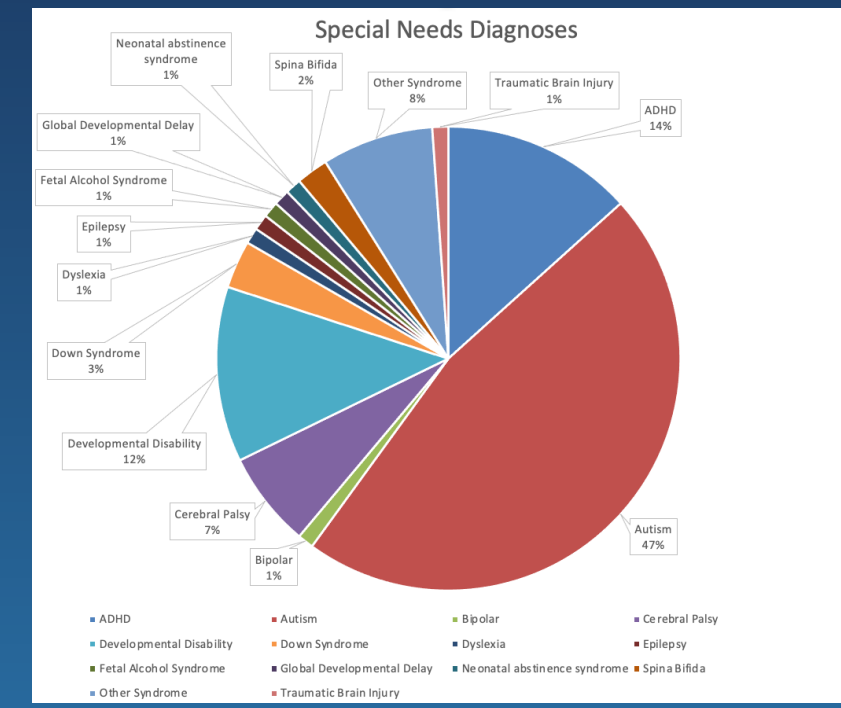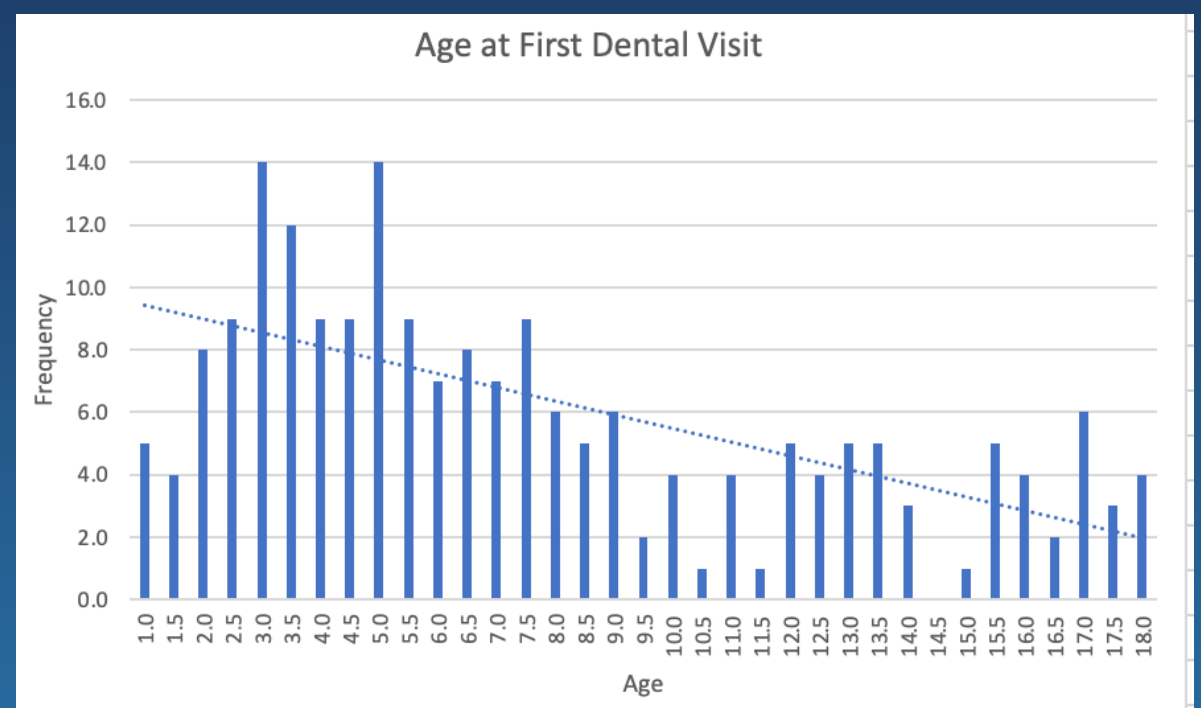
| Special Needs Diagnosis | Race (frequency) | | | | Total | |
|---|---|---|---|---|---|---|
| | African American | American Indian | Asian | Caucasian | | |
| No | 49 | 1 | 6 | 44 | 100 | P=0.03* |
| Yes | 31 | 0 | 5 | 64 | 100 | |
| Total | 80 | 1 | 11 | 108 | 200 | |

**Table 2: Special Needs Status by Sex**

| Special Needs Diagnosis | Sex (frequency) | | | |
|---|---|---|---|---|
| | Female | Male | Total | P=0.02* |
| No | 52 | 48 | 100 | |
| Yes | 36 | 64 | 100 | |
| Total | 88 | 112 | 200 | |

**Table 3: Regression Analysis: Age of Initial Presentation vs. Covariates**

| Parameter | Odds Ratio (95% CI) |
|---|---|
| **Special Needs Status** | |
| No | Ref |
| Yes | -1.51 (-2.93 - -0.09)* |
| **Insurance** | |
| Private | Ref |
| Medicaid | -0.59 (-3.28-2.10) |
| **Race** | |
| White | Ref |
| African American | -0.36 (-1.80-1.09) |
| American Indian | -6.24 (-15.70-3.21) |
| Asian | 0.36 (-2.64 – 3.37) |
| **Sex** | 0 |
| Male | Ref |
| Female | 0.31 (-1.06-1.67) |
| **Distance** | 0.03 (0.00-0.06)* |

## Conclusion

Special needs status was found to be associated with younger age at the first visit, while distance travelled was found to be associated with an older age. Patients in the special needs group had a mean age of 6.8, while patients in the nonspecial needs group had a mean age of 7.8.

There was a significant difference in race between SHCN and healthy groups, with more Caucasian patients diagnosed with SHCN than any other racial group. African Americans represented the largest group in the non-SHCN cohort (Table 2). A significant difference was also found between male and female sex in the SHCN group, with males representing 64%.

These data show a relationship between special needs status, distance from clinic, and race with age of initial presentation. This information may be used to guide future policy development and public health initiatives.

## References

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