

Adverse Childhood Experiences Regarding Children’s Oral Health and Dental Care Services

Nadiene Wu¹, David Kim², Grace Kim³, Cara Lawler⁴, Jenna Yeonkyung Lee⁵
NYU Langone Hospitals-Advanced Education in Pediatric Dentistry, Brooklyn, NY
Hansjorg Wyss Department of Plastic Surgery, Division of Dental Medicine, NYU Langone Health



INTRODUCTION

Structural determinants of health have been found to play a crucial role in children’s health that impact adulthood with several studies attempting to identify the relationship between clinical factors and social, economic, and political factors that may explain health inequality¹

As outlined in the life course approach, which is the study of long-term effects on chronic disease risk of physical and social exposures during gestation, childhood, adolescence, young adulthood, and later adult life, disadvantaged populations and underserved communities have an elevated oral disease risk owing to socioeconomic status, discrimination, and lack of eligibility and/or high out-of-pocket costs for public and private insurance coverage.²

In the presence of one adverse childhood experience (ACE) in a child’s life, there is an increased likelihood of having poor dental health while multiple ACEs create a cumulative negative effect.³

The term ACE refers to negative experiences in childhood that can include physical, sexual and emotional abuse, and household dysfunction such as divorce/separation, mental illness, substance use/misuse, domestic violence and incarceration. ACEs are associated with long-term health effects that can affect a person physically and mentally and can be associated with greater risk of chronic disease, cancer, drugs use, depression and anxiety, and premature death.⁴

PURPOSE

The purpose of this study was to investigate the influence of family income, exposure to mental illness, family divorce, and frequency of ACE experiences with children’s oral health and preventive dental and medical visits.

METHOD

- Study design: Analytical, observational, retrospective, cross-sectional study of the 2017-2018 National Survey of Children's Health conducted by the US Census Bureau⁵
- Sample size and description of sample population: 21,599 completed surveys nationwide with approximate 420 surveys collected from each state
- Sampling Method: convenience, stratified, randomized
- Primary variables: adverse childhood experiences and children's oral health and use of dental care services
- Description of statistical methods: Chi-square test and logistic regression

TABLES

Table 1. Patient Demographics

Variables	Total
Age	8.61
Sex	
Male	51.13 (0.74)
Female	48.87 (0.74)
Ethnicity and Race	
Hispanic	25.13 (0.83)
White, NH	51.36 (0.75)
Black, NH	13.51 (0.55)
Asian, NH	4.69 (0.29)
Other, NH	0.43 (0.09)
Multi-race, NH	4.88 (0.24)
Parental/caregiver knowledge of frequency of annual medical and dental care	
1 "Received preventive medical and dental care"	68.34 (0.72)
2 "Did not receive preventive medical and dental care"	31.66 (0.72)

*NH = Non-Hispanic, H = Hispanic

Table 2. Association between each exposure with parental/caregiver knowledge of oral health problems

Exposure	OR (95%)	p-value
ACE of family income	2.136 (1.726, 2.644)	<.001
ACE of exposure to mental illness	1.868 (1.435, 2.431)	<.001
Frequency of ACE experiences		
1	1.453 (1.130, 1.869)	0.004
2+	2.044 (1.599, 2.613)	<.001

Table 3. Association between exposure of family income with parental/caregiver knowledge of preventive dental care

Exposure	OR (95%)	p-value
ACE of family income	0.869 (0.737, 1.024)	0.095

Table 4. Association between exposure of divorce and parental/caregiver knowledge of preventive dental care

Exposure	OR (95%)	p-value
ACE of exposure to divorce	0.883 (0.713, 1.093)	0.252

RESULTS

- The response rate of the NSCH survey was 37.4%.
- The average age was 8.61 years (Table 1)
- Gender demographics were Male: 51.13% (0.74) and Female 48.87% (0.74) (Table 1)
- Ethnicity and race demographics were White, NH 51.36% (0.75), Hispanic, 25.13% (0.83), Black, NH 13.51% (0.55), Asian, NH 4.69% (0.29), Other, NH 0.43% (0.09), Multi-race, NH 4.88% (0.24). (Table 1)
- Statistically significant association for ACE of exposure to mental illness, family income, and frequency of ACE exposure with one experience or two experiences, significant association was found with parental/caregiver knowledge of their child’s oral health problems. (Table 2)
- No statistically significant association between parental/caregiver knowledge of annual preventive medical and dental history with the ACE of divorce (Table 3) or family income (Table 4) was found.

CONCLUSIONS

- There was a statistically significant relationship between caregiver knowledge of their child's oral health problems and the ACEs of exposure to mental illness, family income, and frequency of ACEs.
- There was no statistical significance between caregiver knowledge of their child's preventive dental history and the ACE of divorce, or between caregiver's knowledge of their child's prevent medical and dental visit history and the ACE of family income.
- Dental providers can counter negative consequences of ACE by providing caregiver guidance in oral health education and being aware of the complex impact of ACEs on child's overall health.

REFERENCES

1. Baker et al. Structural Determinants and Children’s Oral Health: A Cross-National Study. J Dent Res. 2018;97(10):1129-1136.doi:10.1177/0022034518767401
2. Northridge et al (2020). Disparities in Access to Oral Health Care. *Annual review of public health*, 41, 513–535. <https://doi.org/10.1146/annurev-publhealth-040119-094318>
3. Bright et al (2015). Adverse childhood experiences and dental health in children and adolescents. Community dentistry and oral epidemiology, 43(3), 193–199.<https://doi.org/10.1111/cdoe.12137>
4. Crouch et al. The experience of adverse childhood experiences and dental care in childhood. Community Dent Oral Epidemiol. 2018;46(5):442-448. doi:10.1111/cdoe.12389
5. Data Research Center for Child & Adolescent Health. 2017 NSCH Guide to Topics and Questions. <https://www.census.gov/content/dam/Census/programs-surveys/nsch/tech-documentation/methodology/2017-NSCH-FAQs.pdf>. Accessed August 25, 2021.