Oral Health Characteristics of Those Who Use the Emergency Department as Their Usual Source of Care

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BACKGROUND

Introduction

- 21 million U.S. adults visit the Emergency Department (ED) annually.[1]
- 4.5% are ED super-utilizers, averaging 5-10 visits per year.[2]
- Top ambulatory care-sensitive conditions: hypertension, type 2 diabetes, congestive heart failure, coronary artery disease, chronic obstructive pulmonary disease, and asthma.[3]
- These patients likely have unmet oral health needs, increasing risk of urgent dental issues and complicating the management of chronic health conditions.

Study Aim

- To compare oral health characteristics of adults who primarily seek care in the ED versus primary care clinics (PCPs).

Hypotheses

- ED users have poorer oral health status, evidenced by increased rates of dental caries, periodontal disease, or edentulism.
- ED users face more barriers to accessing routine dental care and report poorer perceived oral health.

METHODS

Study Design

- Cross-sectional study using NHANES cycles 2013-2014, 2015-2016, and 2017-2018.
- **Participants**: Individuals aged 21 and older; total of 13,356 unique respondents.
- **Primary exposure**: Usual location for healthcare from NHANES questionnaire data.

Primary Outcomes

- **Edentulism**: Assessed during dental examination.
- **Dental Caries Experience**: Measured using DMFT index, excluding third molars.
- **Periodontal Disease**: Assessed for NHANES cycle 2013-2014 based on CDC and AAP definitions.[4]

Secondary Outcomes

- Self-reported oral health access; perceived oral health.

Covariates

- Age, gender, race/ethnicity, income, education level, and health insurance status.

Statistical Analysis

- Weighted frequency distributions and descriptive analyses; propensity score analysis to minimize confounders.
- Logistic regression models fitted on matched data to assess association between ED utilization and oral health outcomes.

RESULTS

- **Sample size:** 13,356 respondents, with 4.5% (N=600) using the ED as their primary source of healthcare.
- **Demographics:** ED users were younger, more likely to be male, Non-Hispanic Black, have lower income and education levels, and lack health insurance.

Table 1: Oral Health Characteristics based on Usual Source of Care

	Primary Care	Emergency Room
Edentulous	**N (%)**	**N (%)**
Yes	912 (5.5%)	42 (6.6%)
No	10,626 (94.5%)	504 (93.4%
DMFT		
0	584 (5.8%)	23 (4.7%)
1 to 5	1,869 (17.3%)	131 (27.7%)
6 to 10	2,612 (27.3%)	129 (27.6%)
11 to 17	3,325 (32.1%)	123 (20.4%)
18+	2,233 (17.6%)	97 (19.5%)
Decayed Teeth		
Yes	3,060 (23.8%)	291 (58.7%)
No	7,563 (76.2%)	212 (41.3%)
Missing Teeth		
Yes	6,537 (51.6%)	331 (61.6%)
No	4,086 (48.4%)	172 (38.4%)
Decayed or Missing Teeth		
Yes	7,203 (57.8%)	403 (76.6%)
No	3,420 (42.2%)	100 (23.4%)
Periodontal Disease		
None or Mild	2,489 (74.8%)	84 (64.4%)
Moderate	945 (21.5%)	50 (29.3%)
Severe	213 (3.7%)	15 (6.3%)

Table 2: Adjusted Odds Ratios for Dental-Related Outcomes

Oral Health Outcome	Adjusted OR (95% CI)
Edentulism	**0.90** (0.56, 1.45)
Decayed Teeth	**1.89** (1.44, 2.49)*
Missing Teeth	**1.04** (0.79, 1.38)
Decayed or Missing Teeth	**1.27** (0.92, 1.76)
Periodontal Disease	**1.57** (0.96, 2.55)
Less Likely to Visit a Dentist	**1.69** (1.32, 2.22)*
Unmet Dental Care Needs	**1.79** (1.37, 2.33)*
Increased Mouth Pain	**1.44** (1.11, 1.88)*
Poorer Dental Health Ratings	**1.72** (1.33, 2.17)*

* Indicates statistically significant results at the p<0.05 level

CONCLUSIONS

- ED users have greater risk for oral health problems, increasing likelihood of systemic complications and poorer quality of life.
- Early identification of dental issues for frequent ED users can improve health outcomes and reduce healthcare costs.[5]
- Intervention strategies may include brief oral health assessments, patient navigation support, and integrated care models.[6]

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