ASSESSING INFANT ORAL HEALTH BEFORE AND AFTER COVID-19

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Background

- The American Academy of Pediatric Dentistry recommends that an infant's first dental visit take place by the age of 1.

- Amid the COVID-19 pandemic, dental care was especially affected due to factors like reduced discretionary spending and perceived higher risk of viral transmission from aerosolizing procedures.

- This study aims to analyze trends in oral healthcare utilization and caries incidence for infants before and in the aftermath of COVID-19.

Objectives and Hypothesis

Objectives:

1. Compare caries prevalence in infants using dmfs scores before and in the wake of COVID-19;

2. Evaluate recall compliance;

3. Assess the need for emergency and Silver Diamine Fluoride (SDF) treatment;

4. Assess extent of need for complete oral rehabilitation under general anesthesia.

Null hypothesis: There is no significant difference in caries prevalence, recall compliance, emergency treatment need, or need for complete oral rehabilitation under general anesthesia (GA) before and after COVID-19.

Methods

- A retrospective review was completed for infants presenting to the UIC COD Infant Oral Health Clinic for their initial visit in 2019 and 2021.

- All children who presented to the clinic in 2019 (n=128) were reviewed, and that sample size was matched for review in 2021.

- Patient demographics, age at initial appointment, dmfs score, recall compliance, and the needs for emergency treatment, SDF application, and treatment under GA were collected from the patient's Electronic Health Record in Axium.

- Descriptive and bivariate statistical analyses were completed.

- To compare pre and post COVID cohorts, the Wilcoxon Rank Sum and Chi-squared tests were performed. To adjust the effect of patients' age and gender on the outcomes, multivariable linear regression and logistic regression were utilized for continuous and categorical outcomes, respectively.

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Results

Demographic Statistics

AGE	2019	2021
Mean	22.5	24.2
SD	7.11	7.53

Pre Covid / Post Covid
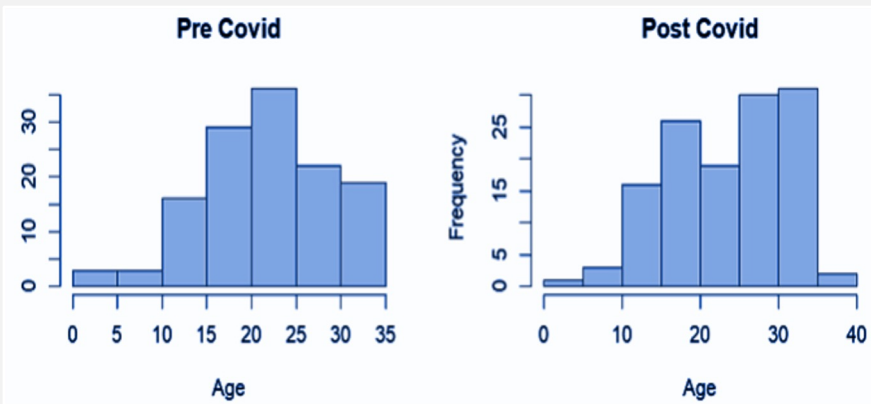
Other findings

- There is **no significant** effect of COVID on sex distribution or age at initial visits
- There is **no significant** effect of COVID on the needs for emergency extractions, treatment under GA, or recall compliance

Caries Rates

%DMFS	2019	2021
Mean	4.69	9.08
SD	7.74	11.33
Wilcoxon Rank Sum Test	Conclusion: dmfs score is significantly different between pre and post covid patients	

	Estimate(β)	p-value	Conclusion
age β_1	0.35	0.000015	Age has effect on dfms
sex β_2	1.38	0.24	Sex has no effect on dfms
covid β_3	-3.84	0.0013	Covid has effect on dmfs

SDF Application

SDF	2019	2021
No	84 (65.6%)	55 (43%)
Yes	44 (34.4%)	73 (57%)
Chi-Square Test	Conclusion: Proportion of SDF treatment in post COVID period (57%) is significantly higher than pre COVID (34.3%)	

	OR	95% CI		Conclusion
age β_1	1.08	1.04	1.13	Age has significant effect on SDF
sex β_2	1.70	1.00	2.90	Sex has marginal effect on SDF
covid β_3	0.41	0.23	0.69	Covid has significant effect on SDF

Recall (<8 mo)	2019	2021
No	85 (66.4%)	85 (66.9%)
Yes	43 (33.6%)	42 (33.1%)

GA	2019	2021
No	98 (76.5%)	109 (85.2%)
Yes	30 (23.5%)	19 (14.8%)

Emg Tx	2019	2021
No	106 (83.5%)	110 (86.6%)
Yes	21 (16.5%)	17 (13.4%)

Conclusions

Majority of infants presented closer to 2 years of age for their initial visit. This study found an overall increase in caries prevalence in the wake of the COVID-19 pandemic, with a significant increase in SDF use to manage caries until the patient is able to tolerate comprehensive treatment, usually under GA. This study underscores the importance of an infant's first dental visit by the age of 1 to prevent caries. Promoting early dental visits for infants and their families provides a valuable opportunity to educate and guide parents regarding their children's oral health.