## **Parental Perspectives on ChatGPT as an Oral Health Information Source** Victoria C. Chang DMD<sup>1</sup>, Brittaney Hill DDS MS MPH<sup>1</sup>, Bhakti Desai DMD MS<sup>1</sup>, Maria Therese Galang-Boquiren DMD MS<sup>2</sup>,



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### Background

- □ Patients increasingly obtain health information from online sources which may include artificial intelligence (AI) tools.
- □ AI chatbots have the potential to improve patient education, information delivery, health outcomes, and informed decision making. Still, AI usage has drawbacks.
- □ As ChatGPT becomes more popular, understanding parents' perceptions and attitudes toward the quality of its information will inform dentists how to provide guidance and caution on it as an additional oral health education resource.

## **Objectives**

- Evaluate how parents perceive the accuracy and helpfulness of ChatGPT responses to pediatric dental questions
- Describe parents' current sources of dental health information and AI familiarity and usage
- □ Analyze if ChatGPT experience and perceived accuracy/helpfulness is associated with any sociodemographic characteristics and reported oral health status of parent/child

#### **Study Timeline:**

10/30/23 ChatGPT responses recorded

Part 1: Demographics Questions

Part 3: ChatGPT Responses to six frequently

How can I prevent cavities?

Is it worth fixing baby teeth?

Should my child use fluoride?

treat my anxious child's teeth?

When should my child first see a dentist?

Is sedating my child for dental care safe?

What kinds of sedations are available to

Part 2: AI Usage & Familiarity

asked questions (FAQs):

6.

**Study Sites:** 



**Observational Cross-Sectional Survey Design:** 

Methods

Accuracy Choices:

8/23/24 IRB Approval received (STUDY2024-0591)

"completely incorrect"

"some correct and incorrec

information"

*"correct but"* 

incomplete/inadequate"

"both correct and

comprehensive"

"not at all useful"

"moderately useful"

"very useful"

ʻslightly/somewhat usefu

Data collected over a 12-week period at 3 clinical sites (August-November)

#### **Inclusion Criteria:**

- Legal guardian  $\checkmark$
- Fluent in English  $\checkmark$  $\checkmark$ 
  - Approachable in
  - person





**Private Office in Schaumburg** (primarily Fee-for-Service)

Tabl



**Primary Sources of Internet Access:** 61% of Medicaid-insured participants access the internet solely through a mobile device, while only 16% of privately-insured participants access the Internet through a mobile device alone.

3.

UIC ntistry and orthodontics **Private Office in Logan Square** University-based Pediatric Dental (primarily Medicaid-serving)



Helpfulness Choices:

#### **Clinic in Illinois Medical District** (primarily Medicaid-serving)

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Sample: 234 of 302 surveys were included in analysis (those with >75% of questions completed). 46% ABC Dentistry, 38% UIC, 16% Apple Dental, with 69% residing outside of Chicago.

Demographics: Caregivers – 81% female, 33% under 35 years, 43% White, 33% Hispanic, 10% Black, 68% employed full-time, 71% education beyond high school. Children – 50% Medicaid enrolled, 53% male, 48% between 6-10 years old.

e 1. Summary of Oral Health Experience				
	Medicaid	Private	Other/No	Total*
	Insurance	Insurance	Insurance	N=234 (100%)
tion. P<0.001**				
ABC Dentistry	3 (2.6)	95 (88.8)	9 (90.0)	107 (45.7)
Apple Dental Care	34 (29.1)	4 (3.7)	0 (0.0)	38 (16.2)
UIC College of Dentistry	80 (68.4)	8 (7.5)	1 (10.0)	89 (38.0)
giver's Last Dental Visit, P=0.0101**				
Less Than 1 Year Ago	87 (74.4)	97 (90.7)	7 (70.0)	191 (81.6)
1 to 3 Years Ago	20 (17.1)	5 (4.7)	1 (10.0)	26 (11.1)
More Than 3 Years Ago	10 (8.5)	5 (4.7)	2 (20.0)	17 (7.3)
giver's Self Report of Oral Health, P<0.001**				
Very Good/Excellent	19 (16.2)	40 (37.4)	4 (40.0)	63 (27.05)
Good	36 (30.8)	51 (47.7)	2 (20.0)	89 (38.2)
Fair/Poor	61 (52.1)	16 (15.0)	4 (40.0)	81 (34.7)
giver's Report of Child's Oral Health, P<0.001**				
Very Good/Excellent	16 (13.7)	47 (43.9)	5 (50.0)	68 (29.0)
Good	34 (29.1)	44 (41.1)	5 (50.0)	83 (35.5)
Fair/Poor	67 (57.3)	16 (15.0)	0 (0.0)	83 (35.5)
on for Child's Visit, P<0.001**				
New Patient	6 (5.1)	2 (1.9)	1 (10.0)	9 (3.9)
Recall (cleaning and checkup)	36 (30.8)	62 (57.9)	4 (40.0)	102 (43.6)
me Receiving Dental Treatment	9 (7.7)	2 (1.9)	0 (0.0)	11 (4.7)
eceiving More Dental Treatment	52 (44.4)	17 (15.9)	3 (30.0)	72 (30.8)
gent Care (dental pain or issue)	10 (8.6)	6 (5.6)	0 (0.0)	16 (6.8)
Other†	4 (3.4)	18 (16.8)	2 (20.0)	24 (10.3)

<sup>+</sup> Most common reason listed for "Other" was Orthodontics

#### **Typical Sources of Dental Health Information:**

- 1. Caregivers primarily rely on "Dentist" (40%)
  - selected it as their only source)
- 2. "Medical Physician" and "Dentist" (19%)
  - Some used alternate sources like "AI Chatbots" (3%), "Social Media," and "Search Engines"
- 4. 18% of Medicaid-insured caregivers do not rely on
  - a dentist at all, versus 7% of privately-insured caregivers



ChatGPT

#### Conclusions

ChatGPT information was generally viewed as accurate and helpful, regardless of caregivers' insurance type. Experience and familiarity with AI and ChatGPT differed between Medicaid and non-Medicaid families. Differences in the perceived helpfulness of ChatGPT responses reflect varying baseline oral health knowledge and preferred sources of health information by caregivers' insurance type.

While ChatGPT shows promise, further validation is needed. It should be used as a supplement to professional care, not as a replacement of healthcare professionals.

\*Response totals do not equal 234 for all variables due to missing data \*\*Chi-Squared or Fisher's Exact Test was the statistical method employed. Patients with no-insurance are not shown in Figures 1-4 but were included in analysis.



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