

Investigating the Attitude, Awareness and Behavior of Pediatric Dentists Towards Teledentistry

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ABSTRACT

Purpose: To investigate the attitude, awareness and behavior of pediatric dentists towards teledentistry.

Methods: A 25 item questionnaire was sent via SurveyMonkey® to 6,821 active members of the American Academy of Pediatric Dentistry practicing in the United States. Respondents were grouped based on their utilization of teledentistry: currently using it, have used it in the past, and never used it.

Results: Four hundred and forty two out of 6,821 members participated in the survey resulting an overall response rate of 6.5%. Forty two percent of the respondents (N=185) never used teledentistry and 58% (N=257) reported some utilization currently or in the past. Respondents who currently utilize teledentistry agreed that teledentistry can be efficiently used for monitoring/follow ups and emergency exams (highest mean: 4.14 and 4.11 out of 5; Cronbach's Alpha= 0.8030). Seventy four percent of the utilizers used teledentistry in treating dental emergencies. Respondents who never utilized teledentistry agreed that teledentistry can be used for education and behavioral instructions (highest mean: 3.86 out of 5; Cronbach's Alpha = 0.8606). In the groups who used teledentistry in the past, 91% reported Covid-19 pandemic as the main reason for teledentistry utilization in their practice. Participants reported the lack of reimbursement, elimination of COVID-19 pandemic restrictions, and difficulty diagnosis as the major reasons for discontinuing teledentistry utilization.

Conclusion: Teledentistry can be a tool in pediatric dental practice, especially in treatment of dental emergencies and follow ups, with main hesitation for utilization being lack of technology resources and reimbursement.

INTRODUCTION

Teledentistry is defined as the use of health information technology as well as telecommunication for oral care, consultation, education and public awareness with the primary focus of improving oral health. The word telehealth or teledentistry have a common prefix 'tele' which derives from the Greek for 'at distance'.¹

Teledentistry encompasses different activities such as diagnosis, treatment, monitoring and prevention of disease, and research. Teledentistry can be used in general and specialty practices and it has the ability to improve access to oral health care, improve the delivery of oral health care, eliminate oral health care disparities and lower oral health care cost.^{2,3,4,5}

In 2018, the American Dental Association published the first two full CDT (Code on Dental Procedure and Nomenclature) teledentistry codes. **D9995** teledentistry – synchronous; real-time encounter and **D9996** teledentistry – asynchronous; information stored and forwarded to dentist for subsequent review.⁶

Although there is a great potential in utilizing teledentistry as an adjunct to clinical dentistry, it is important to consider the challenges that are imposed on teledentistry. For example, there are different state and federal laws, limited reimbursement, logistical issues as well as concerns about data quality and security facing teledentistry.⁷ In addition, there are challenges related to acceptance of teledentistry by dentists and by patients.^{8,9} Lack of teledentistry acceptance among dentists may be due to the fact that some find the technology complex to use or may be afraid of inaccurate diagnosis. Challenges of patient acceptance may be due to the lack of face-to-face communication preventing them from properly disclosing their problems.¹⁰ Educating both patients and providers can help overcome these challenges.

This research focused on investigating the attitude, opinion and awareness of pediatric dentists regarding the role of teledentistry in pediatric dentistry.

MATERIALS AND METHODS

Design: The Institutional Review Board of the Albert Einstein College of Medicine, Bronx, NY, reviewed and approved the conduct of this research protocol as exempt from full review. A literature search of the PubMed electronic database was performed using the following keywords: Teledentistry, Telehealth, Telemedicine, Pediatric Dentistry, Dental Care for Children, School Dentistry, Dentistry, Dentists, and Dental Emergency. The search resulted in 381 articles in English, of which 18 were relevant to this research topic and used to develop the theoretical framework for this study.

Data Collection: A survey consisting of 25 questions was designed in order to collect required data. The survey was pilot tested among current faculty and residents at our institution. The questionnaire was emailed via SurveyMonkey® to 6,821 active members of the American Academy of Pediatric Dentistry in 2022. A follow-up email was sent to those who did not respond to the original request. Data was collected over 5 weeks period.

Sample size: Four hundred forty two out of 6,821 members participated in the survey resulting an overall response rate of 6.5%.

Statistical Analysis: Results were analyzed using standard statistical methodology.

Figure 1. Teledentistry Utilization

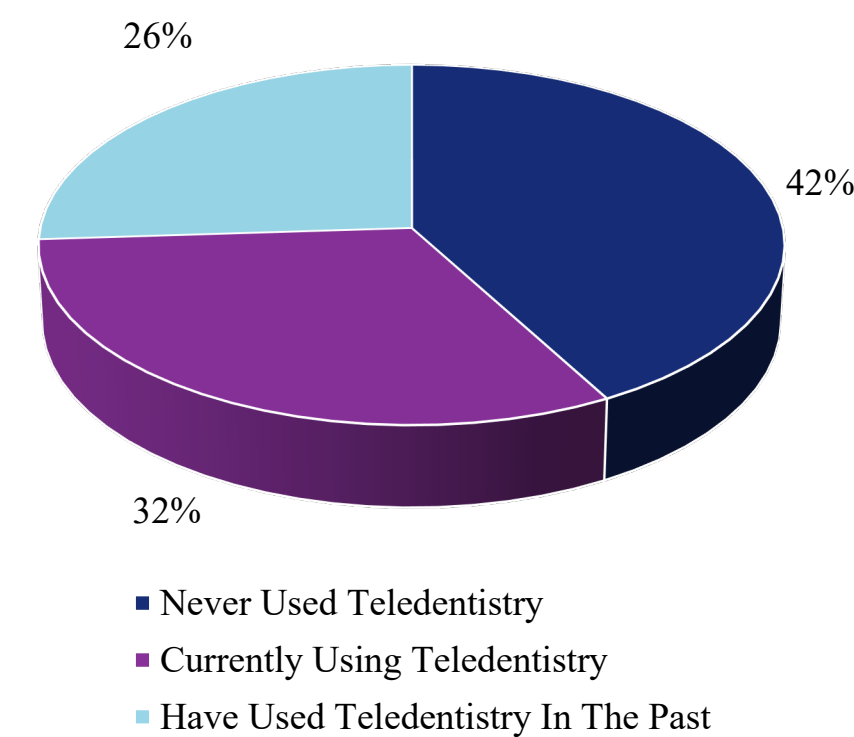


Table 1. Teledentistry Efficiency: Currently Utilize Teledentistry	Mean*	StDev
Monitoring/ Follow Up	4.14	0.86
Emergency Exam	4.11	0.91
Education/ Behavioral Instructions	3.87	1.02
Consultation	3.66	1.17
Limited Exam	3.63	1.01
Recall Exam	1.94	1.11
New Patient Exam	1.92	1.13

Table 2. Teledentistry Efficiency: Utilized in the Past	Mean*	StDev
Monitoring/ Follow Up	3.98	0.88
Education/ Behavioral Instructions	3.94	0.97
Emergency Exam	3.83	1.07
Consultation	3.58	1.14
Limited Exam	3.56	1.14
Recall Exam	1.89	0.98
New Patient Exam	1.73	0.99

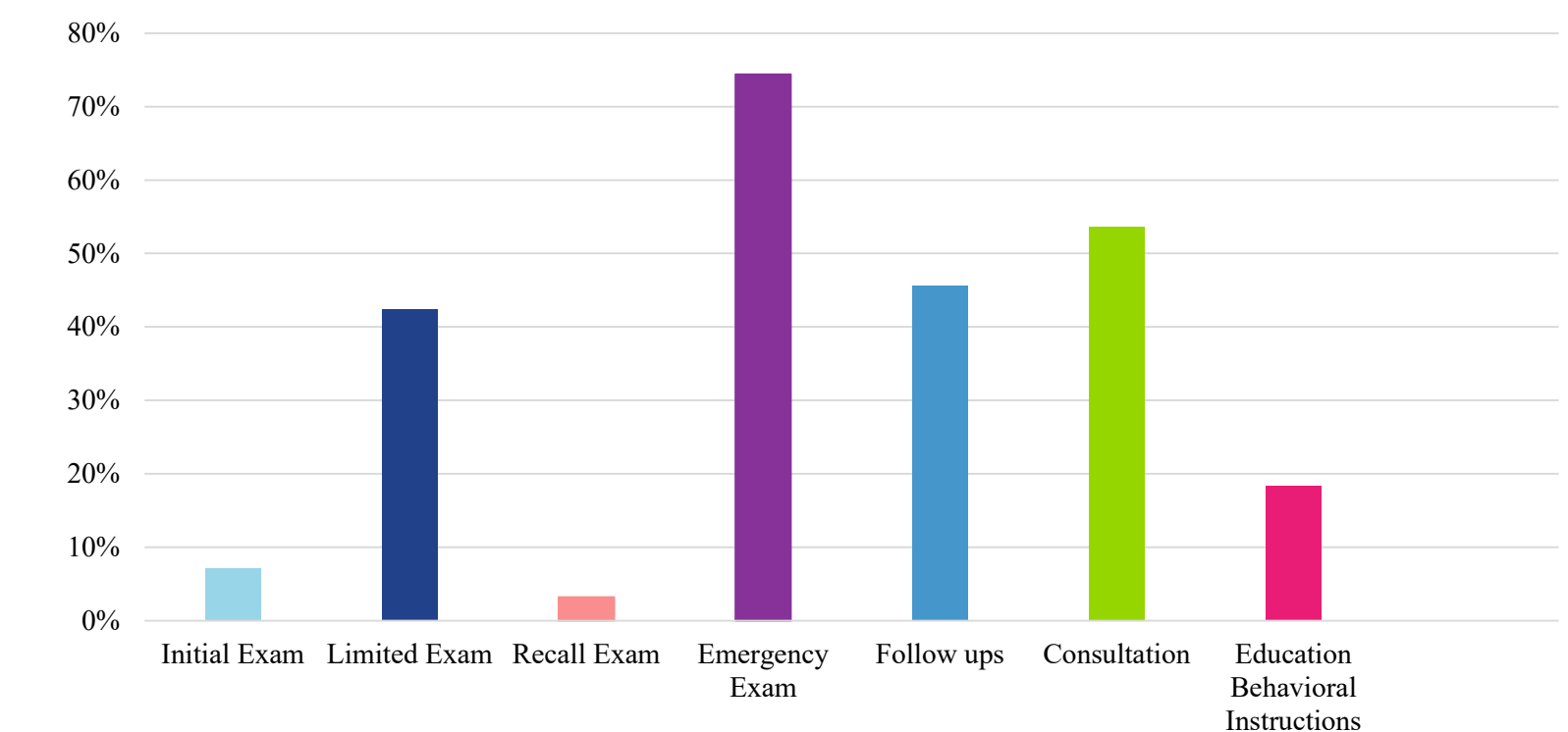
Table 3. Teledentistry Efficiency: Never Utilized	Mean*	StDev
Education/ Behavioral Instructions	3.86	1.10
Monitoring/ Follow Up	3.80	0.80
Consultation	3.53	1.13
Emergency Exam	3.47	1.10
Limited Exam	3.43	1.15
Recall Exam	2.17	1.18
New Patient Exam	1.97	1.18

* Likert Scale:
1= Strongly Disagree; 2= Disagree; 3= Neither agree nor disagree;
4= Agree; 5= Strongly agree

RESULTS

- Four hundred forty two out of 6,821 members participated in the survey resulting an overall response rate of 6.5%. Due to the low response rate, results must be interpreted with caution. The low response rate may suggest the lack of interest in teledentistry.
- Of 442 total respondents, 32% (N= 140) reported currently utilizing teledentistry (group 1), 26% (N= 117) reported utilization in the past (group 2), and 42% (N=185) reported having never used teledentistry (group 3). See Figure 1.
- Respondents who currently utilize teledentistry agreed that teledentistry can be efficiently used for monitoring/follow ups and emergency exams (highest mean: 4.14 and 4.11 out of 5; Cronbach's Alpha= 0.8030- Table 1). Seventy four percent of the utilizers used teledentistry in treating dental emergencies. See Figure 2.
- Respondents who utilized teledentistry in the past agreed that teledentistry can be efficiently used for monitoring/follow ups (highest mean: 3.98 out of 5; Cronbach's Alpha= 0.8357- Table 2). They also reported Covid-19 pandemic as the main reason for utilization of teledentistry in their practice (91%). Participant reported lack of reimbursement, elimination of COVID-19 pandemic restrictions, and difficulty diagnosing as the major reasons for discontinuing teledentistry utilization.
- Respondents who never utilized teledentistry agreed that teledentistry can be used for education and behavioral instructions (highest mean: 3.854 out of 5; Cronbach's Alpha = 0.8606- Table 3). Respondents in this groups also reported low level of awareness about the CDT codes utilized for reimbursement of teledentistry (Mean= 2.40).

Figure 2. Services Offered Via Teledentistry



CONCLUSIONS

- Teledentistry can be a tool in pediatric dental practice, especially in treatment of dental emergencies, consultations, follow ups, and limited exams.
- The main hesitation for utilization of teledentistry in a pediatric dental practice is lack of reimbursement.

BIBLIOGRAPHY

References available upon request