

Teledental Emergencies in the Pediatric Population



Myra Jehangir DDS, Raffi Miller DMD
 NYU Langone Hospitals-Advanced Education in Pediatric Dentistry, Holyoke, MA

NYU Langone Hospitals
 Department of Plastic Surgery
 Division of Dental Medicine

INTRODUCTION

The COVID-19 pandemic affected dental health care dramatically. Dentistry involves close face-to-face interaction with patients; hence during the COVID-19 pandemic, many dental services were suspended.¹ Most dental offices were closed during the pandemic and as a result, all dental procedures that produced aerosols were suspended in most states.² Many offices started offering teledental appointments at the time to see patients with dental emergencies. Teledentistry offered a solution to reduce transmission of the virus and offer emergency dental triage and care.³

Dental emergencies are extremely common in America. In one recent survey,⁵ 22% of the general population had experienced orofacial pain in the preceding six months, and 12% experienced a toothache. In 1996, American students missed 1,611,000 school days because of acute dental problems.⁶ The most common reasons for acute dental pain include caries, infection, cellulitis, and facial trauma.⁴ In this study we will be collecting data from our teledental calls during the pandemic to see which dental emergencies were common during the COVID 19 pandemic. This study will compare the rate of follow up visits based on the type and severity of the teledental emergency (ie. pain, swelling, and trauma).

PURPOSE

The primary objective of this study is to determine if patients returned for follow up visits after teledental consultations during the COVID-19 pandemic. The study addressed the following question: For pediatric dental patients under 18 who participated in teledental appointments during the COVID-19 pandemic, is there a difference in the number of follow up appointments attended based on the type and severity of the patient's dental emergency?

METHOD

This is a retrospective chart review study at the Holyoke Health Center in Holyoke, Massachusetts. Holyoke Health Center is a training site of the NYU Langone Advanced Education in Pediatric Dentistry Program. This research was approved by the NYU Langone Health Institutional Review Board (IRB). A statistical power analysis was performed for sample size estimation, based on data from published study, *Teledentistry: a systematic review of the literature*⁷, with a total of 59 articles that fulfilled the inclusion criteria. The prevalence rates of 16% of teledental consults resulting in diagnosis and 3% requiring treatment were conducted in this study. With an alpha= 0.05 and power 0.8, the projected sample size is approximately 159 patients.

Tables : Teledental emergencies encountered by demographics and type

	Overall
Number of Visits	159
Gender: Female	89
Race	
White	68
Black or African American	8
Native Hawaiian	2
Two or more races	1
Other	75
No response	5
follow up not required	36
Diagnosis	
Pain	75
Infection	35
Soft Tissue lesion	12
Trauma	6
Ortho	27
Other	4
guardian	
Mom	140
Dad	10
Other relative	1
Legal guardian	8
photo sent	15
definitive diagnosis not made	9
number of visits	
0	47
1	87
2	20
3	3
4	2

follow up	Yes	No	p-Value
n	123	36	
sex = Female	66	23	0.37
Race			0.699
White	50	18	
African American	6	2	
Native Hawaiian	2	0	
Two or more races	1	0	
Other	61	14	
No response	3	2	
Diagnosis			<0.001
Pain	57	18	
Infection	33	2	
Soft Tissue lesion	4	8	
Trauma	5	1	
Ortho	23	4	
Other	1	3	
Guardian			0.541
Mom	110	30	
Dad	6	4	
Other relative	1	0	
Legal guardian	6	2	
photo	11	4	0.946
Definitive Diagnosis	9	0	0.207
number of visits			<0.001
0	12	35	
1	86	1	
2	20	0	
3	3	0	
4	2	0	

Diagnosis	Pain	Infection	Soft Tissue Lesion	Trauma	Ortho	Other	p
n	75	35	12	6	27	4	
sex = Female	47	16	8	3	14	1	0.387
race							0.281
White	32	12	5	2	14	3	
African American	2	2	1	0	3	0	
Native Hawaiian	0	2	0	0	0	0	
Two or more races	1	0	0	0	0	0	
Other	40	17	5	4	9	0	
No response	0	2	1	0	1	1	
follow up	18	2	8	1	4	3	<0.001
Guardian							0.024
Mom	70	31	9	4	23	3	
Dad	3	0	2	2	3	0	
Other relative	0	0	0	0	1	0	
Legal guardian	2	4	1	0	0	1	
photo	7	1	0	1	6	0	0.11
Definitive Diagnosis	5	3	1	0	0	0	0.688
number of visits							0.002
0	24	5	9	1	5	3	
1	38	20	3	3	22	1	
2	10	9	0	1	0	0	
3	1	1	0	1	0	0	
4	2	0	0	0	0	0	

RESULTS

Out of the 159 charts studied, it was found that 75 (47%) of those calls were due to pain, 35 (16%) due to infection, 27 (14%) due to an orthodontic concern, 12 (8%) due to soft tissue lesion, 6 (3%) for trauma, and 4 (2%) for other (i.e. when clinic will be open, appointment time, etc) (p=<0.001). 77.4% of the calls received warranted a follow up visit. 70.4% of patients presented for a follow up visit at least once and 22.6% of the calls did not require a follow up which means only 7% of people who were told to follow up did not come. 94.3% of the time a differential diagnosis was confirmed via call and 90.4% of the time a photo was received. 88% of the times the patient's mother was the ones who called.

Among the calls received, 42% of the population was white, 2% African American, 1.3% American Indian, and 47% of the population chose not to respond. Out of these races 72.3% of the population studied identified as Hispanic.

CONCLUSIONS

Based on the study's results the following conclusion can be made:

1. Pain and infection were the majority of the reason for teledental calls.
2. Most of the calls required at least 1 in-person clinic visit, which patients presented for at a high rate.

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