



Introduction

Teledentistry has been on the rise, especially during the COVID-19 pandemic when many dental offices were closed and dental treatment was largely halted—Telehealth is potentially one of the most impactful mediums for providing healthcare in the world today. One study cites the effect teledentistry has on reducing the morbidity and mortality associated with delayed diagnoses and in turn the effect that has on reducing healthcare costs. [1] One such paper explores patient compliance with dental treatment in a rural population when given live-video teledentistry consultations. [2] Compliance rates varied from 56% to 100% depending on the dental treatment modality offered with no statistically significant difference between them. The mobile application, Doximity, which “is the largest, secure, HIPAA (Health Insurance Portability and Accountability Act) compatible medical network in the USA” with “over 1 million members, covering over 70% of US doctors” was chosen for this study. [3]

This study aims to analyze the effectiveness of using teledentistry video calls with patients who have missed their in-person follow-up appointment after either a visit to the operating room (OR), emergency department (ED) or dental clinics as emergency walk-ins (EMG). This will enable the dentist to triage disease, ensure patient well-being, as well as encourage in-person appointments if needed. Teledentistry can be a powerful tool to further educate and encourage patients in matters of oral health.



Study Objectives

- 1) Determine the reasons patients miss their appointments
- 2) Assess the need for an in-person appointment following a limited exam via a video teledentistry visit
- 3) Assess the no-show rate at the second follow-up appointment if given

Methods

Subjects

Three-hundred-fourteen patients aged 0-17 years old who were either new or established patients were the subjects of this study. Patients who had been treated for full mouth rehabilitation under general anesthesia in the operating room (OR), had been triaged in the emergency department (ED) due to dental or oral concerns, who had visited the dental clinics as emergency walk-ins (EMG) and who have missed their in-person follow-up appointment were further analyzed for this study.

Patient Selection

Inclusion Criteria: Patients aged 0-17 years old. OR, EMG or ED patients who have missed their in-person follow-up appointment

Exclusion Criteria: not owning a smartphone, not returning calls despite two attempts on two separate days, choosing to continue dental care elsewhere, being away from guardians for an extended period of time

Data Collection

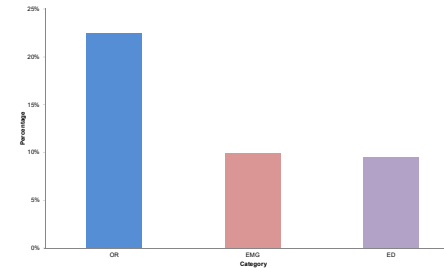
Forty-one patients across the 3 categories missed their follow-up appointment. The patients/guardians were contacted via video call using the mobile application Doximity within 48 hours of missing their in-person appointment at the dental clinic. Those requiring interpretation to a language other than English were provided an interpreter in the video call. Doximity is a mobile application approved by St. Barnabas Hospital, Bronx, NY to transmit protected health information (PHI). During the teledentistry video call, the parent/guardian was asked the reason for missing the appointment. They were then asked to display the patient's oral cavity via video camera to allow for a limited oral exam. Then, a conversation regarding the cause and prevention of caries, diet counseling, oral hygiene instructions and the importance of keeping dental appointments was discussed. The need for an in-person follow-up appointment was then assessed and if needed, the patient was given an appointment. The rate of attendance at the in-person follow-up appointment if still needed by the patient was measured.

Statistical Analyses

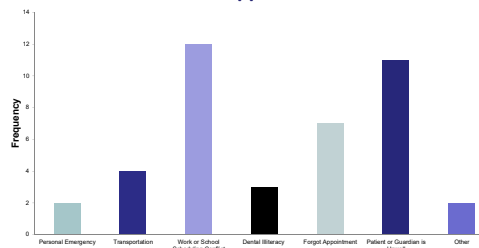
The frequencies of collected data were described using categorical variables. Chi-squared test was used to determine the association of two categorical variables.

Results

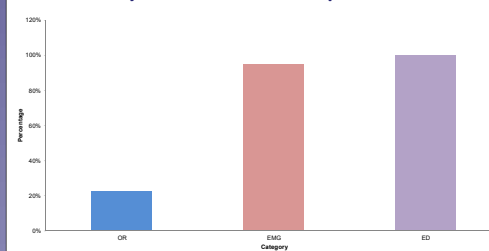
1. Missed First Follow-Up



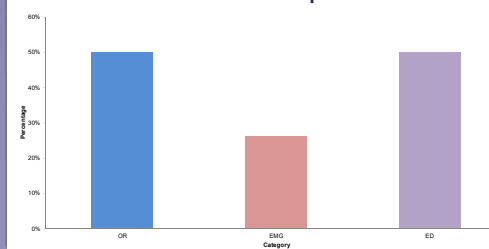
2. Reasons for Missed Appointments



3. Necessity for Second Follow-Up



4. Absence at Second Follow-Up



Discussion

- The no-show rate for OR patients was higher than that of EMG patients ($P < 0.005$). This finding is likely due to patients no longer experiencing their primary dental complaint after full mouth rehabilitation in the OR, while EMG patients still require their primary dental concern addressed.
- The primarily cited reason for missed appointments is work or school scheduling conflicts, followed by illness of the patient or guardian. The former finding is understandable in the pediatric population as patients and their parents/guardians have schedules that may conflict with that of the clinic.
- Teledentistry has significantly reduced the need for in-person follow-up appointments in the OR versus the EMG ($P < 0.001$) and ED ($P = 0.23$) patient populations. This finding can have practical implications for dental clinics whereby OR patients can have a virtual teledentistry follow-up visit, saving chair time, and the patient's time. One study showed that by implementing teledentistry during the COVID-19 pandemic, dental providers were able to reduce the number of in-person appointments needed by over a third [4].
- Finally, there is no significant difference in the no-show rate at the second in-person appointment (when needed) between all three categories.

Conclusions

- Teledentistry has a significant effect on the need for follow-up appointments among patients treated in the OR for full mouth rehabilitation and can be used to eliminate in-person appointments in certain cases.
- It has not had a significant effect on eliminating the need for in-person follow-up appointments among emergency walk-in clinic patients and those who have visited the emergency department.

Study Limitations

- Limited number of ED patients.
- Short duration of this study (11 months).
- Not distinguishing between follow-up appointments for procedures versus for evaluations.
- Patient symptoms could be a confounding variable whereby patients in pain may be more motivated to attend appointments than patients not in pain or discomfort.

References

1. Daniel SJ, Kumar S. Teledentistry: a key component in access to care. *J Evid Based Dent Pract.* 2014 Jun;14 Suppl:201-8. doi: 10.1016/j.jebdp.2014.02.008. Epub 2014 Mar 5. PMID: 24929605.
2. McLaren SW, Kopycka-Kedzierawski DT. Compliance with dental treatment recommendations by rural paediatric patients after a live-video teledentistry consultation: A preliminary report. *J Telemed Telecare.* 2016 Apr;22(3):198-202. doi: 10.1177/1357633X15590705. Epub 2015 Jun 26. PMID: 26116852.
3. Buro JS. App Review Series: Doximity. *J Digit Imaging.* 2019 Feb;32(1):1-5. doi: 10.1007/s10270-018-0109-4. PMID: 30030764; PMCID: PMC6382630.
4. Wallace CK, Schofield CE, Burbridge LAL, O'Donnell KL. Role of teledentistry in paediatric dentistry. *Br Dent J.* 2021 Jun 25;1-6. doi: 10.1038/s41415-021-3015-y. Epub ahead of print. PMID: 34172921; PMCID: PMC8231751.
5. Crown, C. A. (2018, October 5). A Beginner's Guide to Teledentistry. Today's RDH. Retrieved March 4, 2023, from <https://www.todayrdh.com/a-beginners-guide-to-teledentistry/>