

# Emergency Dental Treatment in Children with Behavioral Issues Post-COVID Lockdown

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## Abstract

**Purpose:** This retrospective study evaluates the impact of the COVID-19 pandemic on the number of pediatric patients reporting as dental emergencies with behavioral issues at the University of Rochester Eastman Institute for Oral Health. By comparing pre-pandemic (2017–2019) and post-pandemic (2021–2023) data, the study aimed to determine whether the pandemic contributed to increased reported behavioral issues and changes in treatment modalities.

**Methods:** Patient records between the ages 0–17 from emergency walk-in visits during the specified periods were extracted from the AxiUm database. Data included behavioral issues, treatment modalities, and patient demographics. Descriptive statistics and logistic regression analyses were applied to assess associations between the study period and behavioral issue prevalence, adjusting for potential confounders.

**Results:** While there was no significant change in patient demographics, the study found a significant increase in pediatric emergency dental visits and a rise in cases with behavioral concerns post-pandemic. The average age of patients with behavioral issues increased from 9.99 to 11.44 years. Additionally, symptoms of anxiety and depression were more common. Clinical management shifted, with more use of nitrous oxide, more extractions, and fewer restorations or stainless steel crowns. There was also an increase in referrals to general dentistry, oral and maxillofacial surgery, and pediatric operating room services, indicating more complex cases.

**Conclusions:** The study highlights a rise in pediatric emergency dental visits and behavioral issues in the post-COVID period. Treatment strategies shifted, with increased use of nitrous oxide, fewer restorative procedures, and more extractions. There was also an increase in referrals to specialized services. These trends emphasize the need for improved behavioral and mental health support, better behavior management techniques, and adaptable treatment planning in a post-COVID world.

## Background

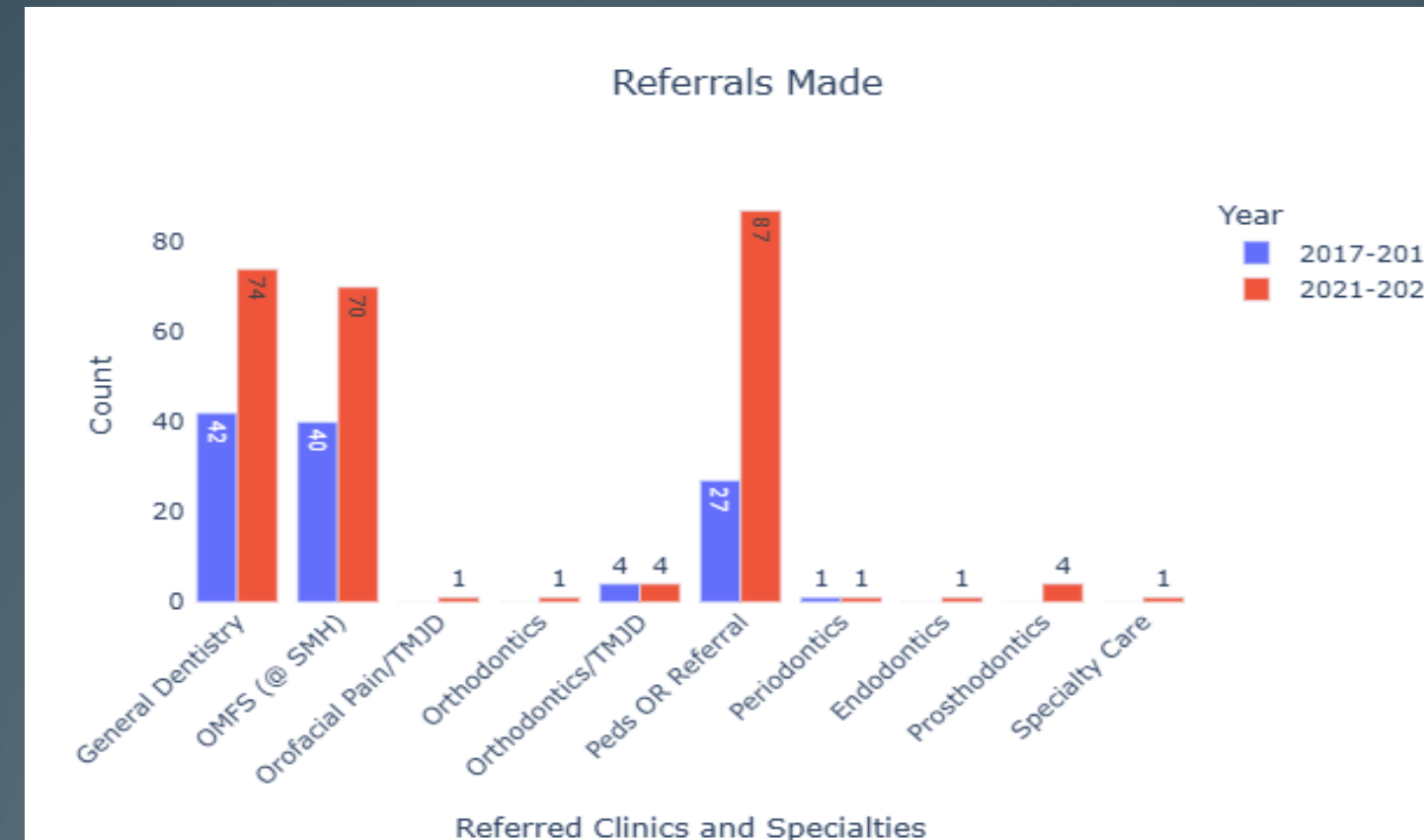
In January 2020, the SARS-CoV-2 virus was identified in Wuhan, leading to a global COVID-19 pandemic by March. By September, there were 27 million cases and nearly 890,000 deaths worldwide (1). In response, governments implemented lockdowns, including school and daycare closures, which left children isolated from peers. Isolation contributes to increased consumption of high-carb and sugary foods, raising the risk of dental caries (2). Additionally, access to dental and medical care decreased, with 56% of parents avoiding appointments, 86% of dental trauma cases going untreated, and 24.4% of children having suspended treatments (3).

The lockdown worsened behavioral issues, with 34% of parents of children with ADHD reporting increased symptoms such as agitation and aggression (5). Many children turned to gaming as a coping mechanism, which added stress (5). Reduced social contact and uncertainty increased the risks for anxiety and depression in adolescents (4). Overall, the pandemic triggered a surge in mental health issues, including eating disorders and substance abuse (5).

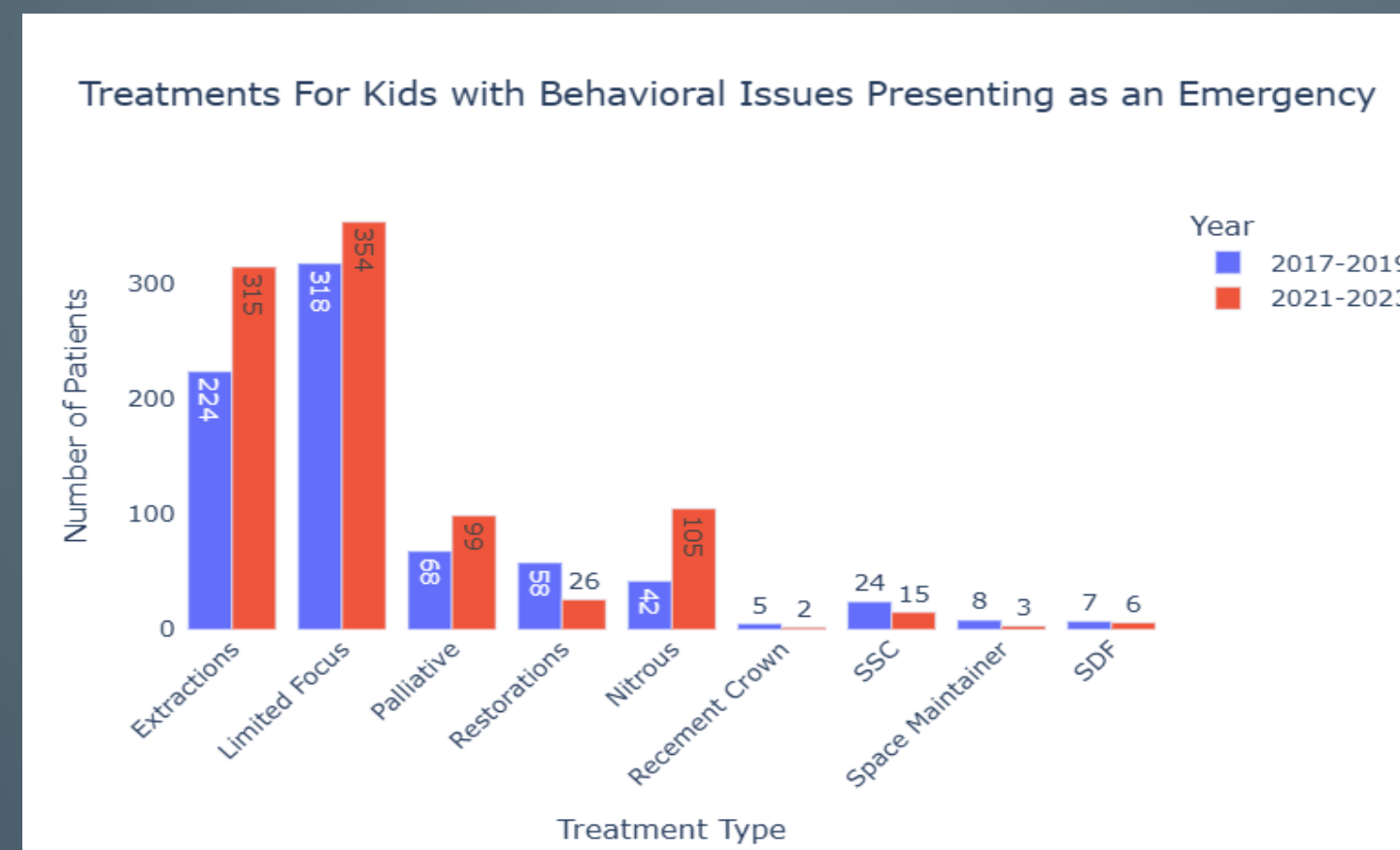
•The EIOH Pediatric Dental Clinic has since seen a rise in emergencies, with children who have pre-existing behavioral challenges now experiencing heightened stress during dental visits. This study aims to determine if the pandemic led to an increase in self-reported behavioral issues and changes in recommended dental treatment.

## Results

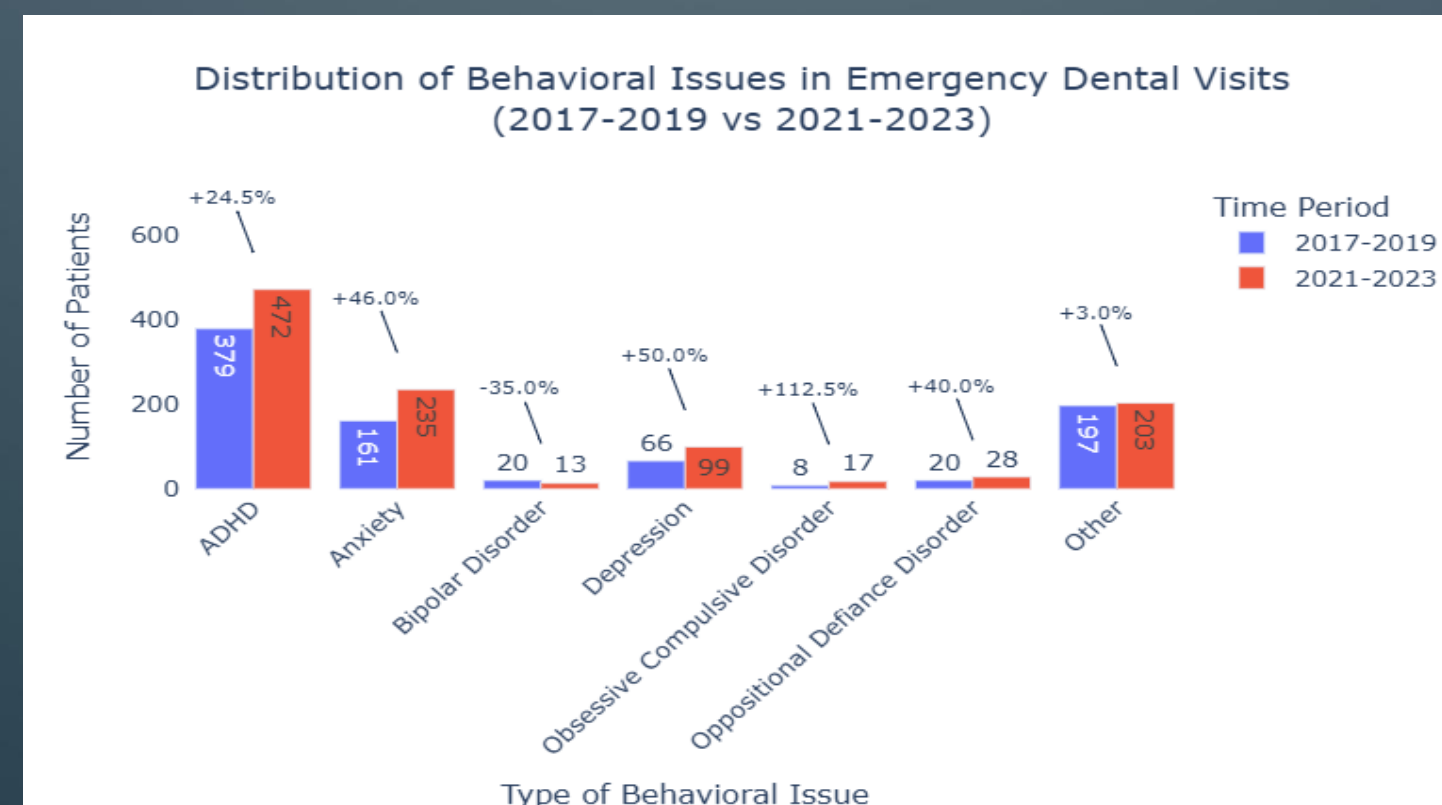
### Referrals for Patients With Behavioral Issues as Emergency



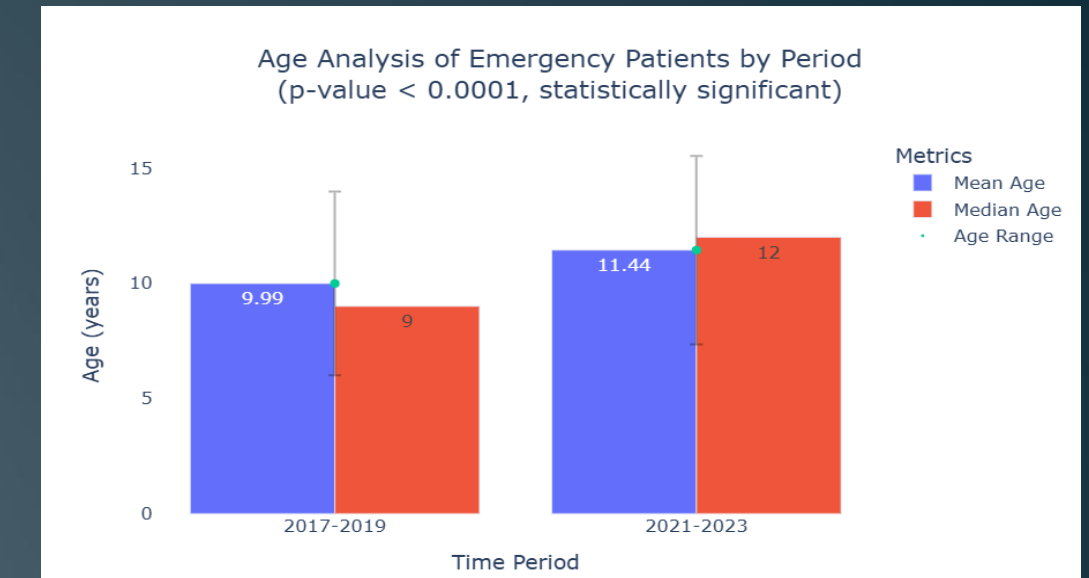
### Emergency Treatment Types



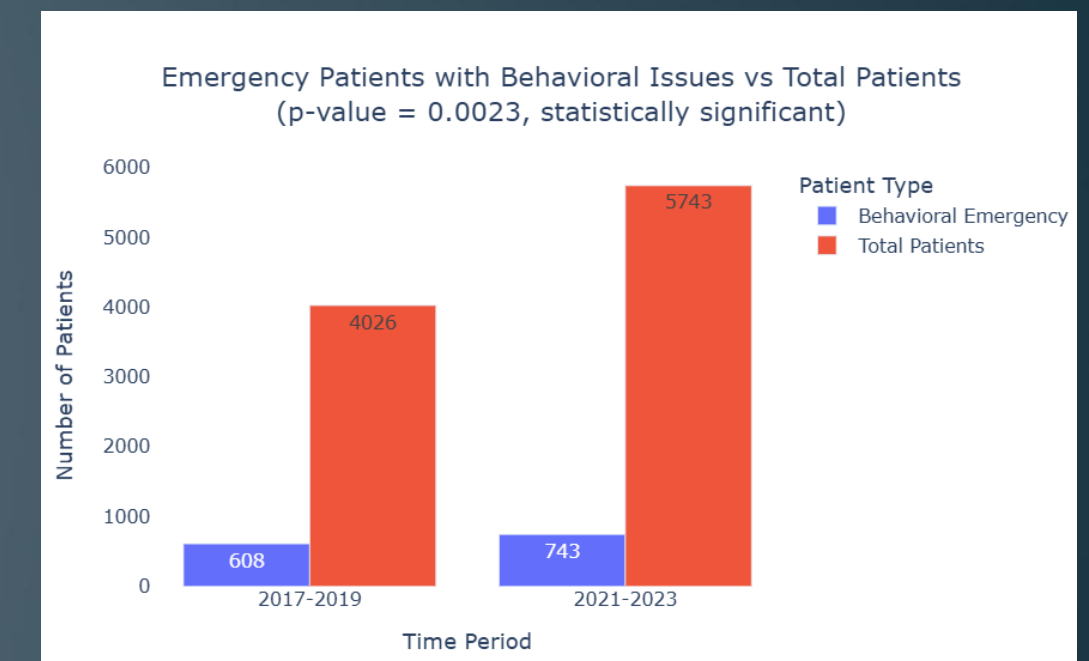
### Behavioral Issues



### Average Age



### Emergencies Presenting With and Without Behavioral Issues



## Conclusion

- Rise in Pediatric Emergency Visits:** There was an increase in pediatric emergency dental visits post-COVID.
- Increased Behavioral Issues:** More children presented with behavioral concerns during these visits.
- Shift in Treatment Strategies:**
  - More use of nitrous oxide.
  - Fewer restorative procedures (e.g., restorations, crowns).
  - More extractions performed.
- Increased Referrals:** More referrals were made to specialized services, including general dentistry, oral surgery, and pediatric operating rooms.

## Reference

1. World Health Organization (2020c). Rolling Updates on coronavirus disease (COVID-19). <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.
2. European Centre for Disease Prevention and Control, 2020. COVID-19 situation update worldwide. Agostini, F.G., C.M. Flaitz, and M.J. Hicks, Dental emergencies in a university-based pediatric dentistry postgraduate outpatient clinic: a retrospective study. ASDC J Dent Child, 2001. 68(5-6): p. 316-21, 300-1.
3. Colombo and Tanner, 2019. The Role of Bacterial Biofilms in Dental Caries and Periodontal and Peri-Implant Diseases: A Historical Perspective. Journal of Dental Research, 98 (4)(2019), pp373-385. <https://doi.org/10.1016/j.childyouth.2020.105469>
4. Campagnaro R, Collet GdO, 2020. COVID-19 Pandemic and Pediatric Dentistry: Fear, Eating Habits and Parent's Oral Health Perceptions. Childrens and Youth Service Review (118)(2020), <https://doi.org/10.1016/j.childyouth.2020.105469>
5. Buzzi C, Tucci M, Ciprandi R, Brambilla I, Caimmi S, Ciprandi G, et al. The psycho-social effects of COVID-19 on Italian adolescents' attitudes and behaviors. Ital J Pediatr. 24 mai 2020;46(1):69.
6. Bera L, Souchon M, Ladsous A. Emotional and Behavioral Impact of the COVID-19 Epidemic in Adolescents.