



Background

- Very young patients, patients with high dental anxiety,¹ or patients with special healthcare needs (SHCN), require the use of general anesthesia (GA) for their dental care.²
- Pediatric patients rely on caregivers or sometimes their whole family in order to attend a GA appointment.³
- Failure to attend a GA appointment can be costly, inconvenient, and hazardous to the health of the patient.⁴
- Although previous studies have evaluated GA appointments failure rates, studies have not evaluated the impact of COVID-19 on GA appointments.⁵
- The pandemic created new challenges for patients and their families as hospital protocols and requirements were ever-changing.⁶

Objective

- To evaluate reasons pediatric dental patients failed GA appointments post the COVID-19 pandemic.
- This study was a follow-up study to a similar study completed in 2021, aiming to build and further investigate the insights obtained from the earlier research.

Materials & Methods

- Using methods from a previous study, Butler et al., conducted in 2021, data were collected using a retrospective review of 276 charts of patients with GA appointments at a university pediatric dental clinic between September 26th, 2022, and May 31st, 2023.⁵
- The time period of this study was selected because September 26th was the first day when COVID-19 tests were no longer required for all patients undergoing GA.
- Information obtained included patient age, sex, the distance between residence and the university, insurance type, referral status, affiliation of the primary care provider, SHCN status, completion of intermediate dental treatment, time between consultation and GA appointment, and reasons for failed appointments.
- Descriptive and bivariate analyses (alpha = 0.05) were conducted.

Results

- 276 patients were included in the study- 45 patients (53.3% males and mean age=7.7±7.4 years) failed their GA appointment and 231 patients (63.6% males and mean age= 8.4±5.7 years) kept their GA appointment.
- Of the 45 patients that failed their GA appointments, 31 appointments were cancelled and rescheduled more than 24 hours prior to the GA appointment and 14 were cancelled less than 24 hours prior to the GA appointment.
- Subjects who received emergency dental care between the consultation and the GA appointment were more likely to fail the GA appointment than those who did not.
- Subjects with SHCN were less likely to fail their GA appointment than those without SHCN.
- The mean and median days between consultation and the GA appointment for subjects who failed their GA appointment were significantly higher than for those who kept their appointment.
- Factors of age, sex, distance between residence and the university, insurance type and clinical variables showed no significant associations with failed appointments.

Table 1. Types of nonsurgical procedures utilized between consultation appointment and definitive care visit.

Variable	Failed Appointments	Kept Appointments	Total
	(N=2) n (%)	(N=35) n (%)	(N=37) n (%)
Types of nonsurgical procedures utilized**			
Hall Crown	1 (50.0)	1 (2.9)	2 (5.4)
Silver Diamine Fluoride	1 (50.0)	20 (57.1)	21 (56.8)
Fuji	0 (0.0)	6 (17.1)	6 (16.2)
Antibiotics	0 (0.0)	5 (14.3)	5 (13.5)
Other	0 (0.0)	3 (8.6)	3 (8.1)

**Note: The data presented is only applicable to subjects who responded 'Yes' to the above question.

Table 2. Reasons for patients missed appointments in dental treatments involving history and physical general exams and general anesthesia care (N=45)

Reason	Frequency (%)
Child illness	19 (42.3)
Provider cancelled due to illness	9 (20.0)
Other	7 (15.6)
Caregiver work conflict	3 (6.7)
Did not follow NPO guidelines	2 (4.4)
Caregiver changed mind	2 (4.4)
Weather	1 (2.2)
Insurance conflict	1 (2.2)
Unknown	1 (2.2)

Table 3. Evaluation of factors influencing failed dental appointments in treatments utilizing history and physical general exams and general anesthesia care

Variable	Failed Appointments	Kept Appointments	P-value
	(N=45) n (%)	(N=231) n (%)	
Demographic variables			
Gender			0.193
Male	24 (14.0)	147 (86.0)	
Female	21 (20.0)	84 (80.0)	
Age group			0.117
≤5 years	25 (20.2)	99 (79.8)	
>5 years	20 (13.2)	132 (86.8)	
Age (years)			0.082
Mean ±SD	7.7±7.4	8.4±5.7	
Median (Range)	5 (3-39)	6 (2-36)	
Distance between a patient's residence and the UICOD (miles)			0.099
Mean ±SD	48.0±40.0	56.9±34.3	
Median (Range)	48 (1-191)	56.0(1-190)	
Distance between a patient's residence and the UICOD (miles)			0.138
Less than or equal to 30 miles	18 (22.8)	61 (77.2)	
31-60 miles	12 (14.0)	74 (86.0)	
61-90 miles	10 (13.5)	64 (86.5)	
Greater than 90 miles	5 (13.5)	32 (86.5)	
Types of insurance			0.156
DWP\ Hawk-I	32 (14.7)	186 (85.3)	
Private insurance and other	13 (22.4)	45 (77.6)	
Dental Clinic the patient originated from			0.086
Centers for Disabilities and Development (CDD)	11 (10.6)	93 (89.4)	
Dental School Building (PEDO)	33 (19.6)	135 (80.4)	
Other	1 (25.0)	3 (75.0)	
Clinical variables			
Patient was referred from an outside dental provider			0.221
Yes	34 (18.2)	153 (81.8)	
No	11 (12.4)	78 (87.6)	
Patient's primary care physician was with university hospital			0.932
Yes	10 (16.7)	50 (83.3)	
No	35 (16.2)	181 (83.8)	
Special health care needs			0.044*
Yes	16 (11.8)	120 (88.2)	
No	29 (20.7)	111 (79.3)	
Nonsurgical caries management was utilized			0.057
Yes	2 (5.4)	35 (94.6)	
No	43 (18.0)	196 (82.0)	
Emergency dental care provided consultation appointment and definitive care visit			0.033*
Yes	13 (26.5)	36 (73.5)	
No	32 (14.1)	195 (85.9)	
Number of days between consultation appointment and definitive care visit			0.002**
Mean	219.5±97.8	166.8±96.2	
Median (Range)	215.5 (50-376)	181 (2-690)	

*Statistically significant (p<0.05) using a chi-square test

**Statistically significant (p<0.05) using a nonparametric Mann-Whitney U test

Limitations

- This study was limited by the ability to accurately identify all the reasons patients missed their appointments.
- The study was also limited by the changing hospital protocols surrounding the COVID-19 pandemic.
- Additionally, the unbalanced sample size of patients who kept their GA appointments compared with those who failed their GA appointments may reduce statistical power.

Conclusions

- Significant differences were found between patients who failed their GA appointments compared with patients who kept their GA appointments regarding:
 - They received emergency dental care
 - Were a patient with SHCN
- Subjects who failed their GA appointment had a higher mean / median number of days between the consultation visit and the GA appointment.

Acknowledgments

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References

- Yildirim S, Bakkal M, Bulut H, Selek S. Quantitative evaluation of dental anxiety indicators in the serum and saliva samples of children treated under general anesthesia. Clin Oral Investig 2018;22(6):2373-80.
- American Academy of Pediatric Dentistry. Use of anesthesia providers in the administration of office based deep sedation/general anesthesia to the Pediatric Dental Patient. The Reference Manual of Pediatric Dentistry. Chicago Ill.: American Academy of Pediatric Dentistry; 2021:372-6.
- O'Brien K, Mattick R, Mandall N, Wright J, Conboy F, Gosden T. Orthodontics: Are specialist outreach clinics for orthodontic consultation effective? A randomised controlled trial. Br Dent J 2001; 191(4):203-7.
- Souza JGS, Souza SE, Noronha MDS, Ferreira EFE, Martins AMEBL. Impact of untreated dental caries on the daily activities of children. J Public Health Dent 2018;78(3):197-202.
- Butler, J., Leary, K., Qian, F., & Lesch, A. (2021). Comparison of Failed and Kept General Anesthesia Appointments in a Pediatric Dental Clinic. Journal of Dentistry for Children (Chicago, Ill.), 88(3), 173–179.
- Palumbo P, Massimi F, Biondi A, Cirocchi R, De Luca GM, Giraudo G, Intini SG, Monzani R, Sozio G, Usai S; Società Italiana di Chirurgia Ambulatoriale Day Surgery (SICADS) Board. Recommendations for outpatient activity in COVID-19 pandemic. Open Med (Wars). 2021 Nov 9;16(1):1696-1704.