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# Effect of wait time on pediatric dental rehabilitation under GA

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## Introduction

Full mouth rehabilitation under general anesthesia (GA) is indicated for patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability; who are extremely uncooperative, fearful, or anxious; who are pre-communicative or non-communicative child or adolescent; requiring significant surgical procedures that can be combined with dental procedures to reduce the number of anesthetic exposures; for whom the use of general anesthesia may protect the developing psyche and/or reduce medical risk; and requiring immediate, comprehensive oral/dental care (e.g., due to dental trauma, severe infection/cellulitis, acute pain)<sup>1</sup>.

Increasing number of pediatric dentists are performing dental procedures under GA, however, the long waitlist can result in pain, disruption of sleeping and eating patterns of children, increased numbers in prescription of antibiotics and analgesics<sup>2, 3</sup>. Pain, sleepless nights, missed school were reported to be the most common features during a wait for dental GA<sup>4</sup>. To efficiently utilize the available resources and time to provide the care for pediatric patients waiting for the rehabilitation, it is crucial to examine the efficiency of the current system for scheduling and performing dental operating room (OR) cases.

The objective of this study was **to evaluate the effect of operating room (OR) wait time on treatment plan changes and OR time among children receiving oral rehabilitation under GA.**

## Materials and methods

A retrospective review of pediatric dental GA records was performed at Franciscan Children's Hospital (FCH), MA among children who underwent oral rehabilitative treatment under GA in the Operating Room (OR) between July 1<sup>st</sup>, 2020 and July 1<sup>st</sup>, 2021. This study was approved by FCH Institutional Review Board.

The variables including age, gender, ASA classification, insurance type, referral date, treatment plan by each tooth (sealant, composite, stainless steel crown, pulpotomy, extraction, space maintainer), scheduled case time, OR date, completed treatment in the OR by each tooth and actual case time were recorded.

Data analysis was performed by SPSS Statistics 28.0 (IBM) for variance (ANOVA), t – test and linear regression analysis.

## Results

- A retrospective review of 261 pediatric dental records was analyzed.
- The mean age was 8 ± 5.5 (mean ± std) and 34.5% were special care needs patients. The average OR wait time was 77.9 (± 70.75) days.

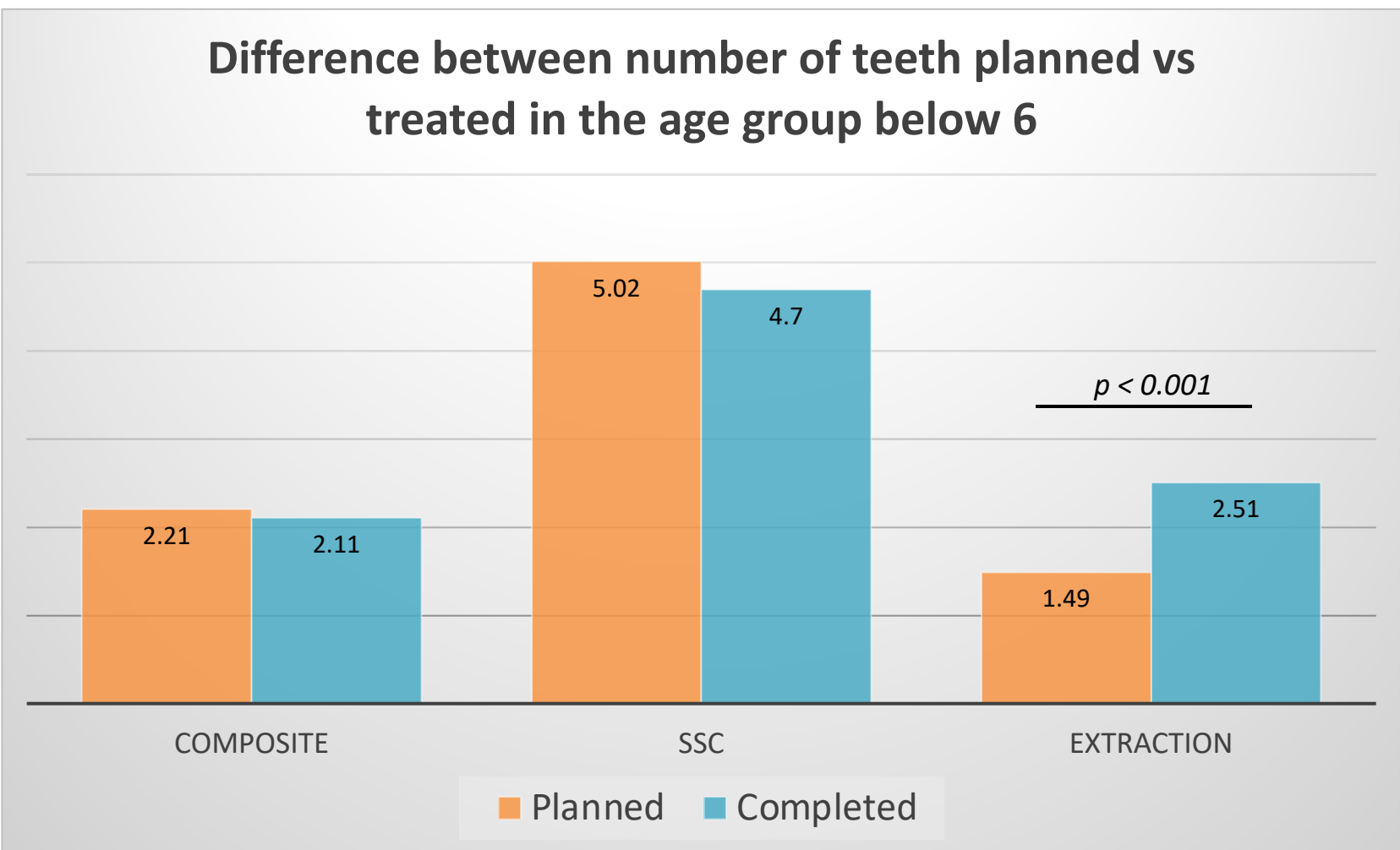
**Table 1. Wait time for the OR (days) by patient groups**

Patient group	N	Mean	SD	χ <sup>2</sup>
Healthy	134	64.49	53.702	0.003
SHCN	75	101.95	89.32	

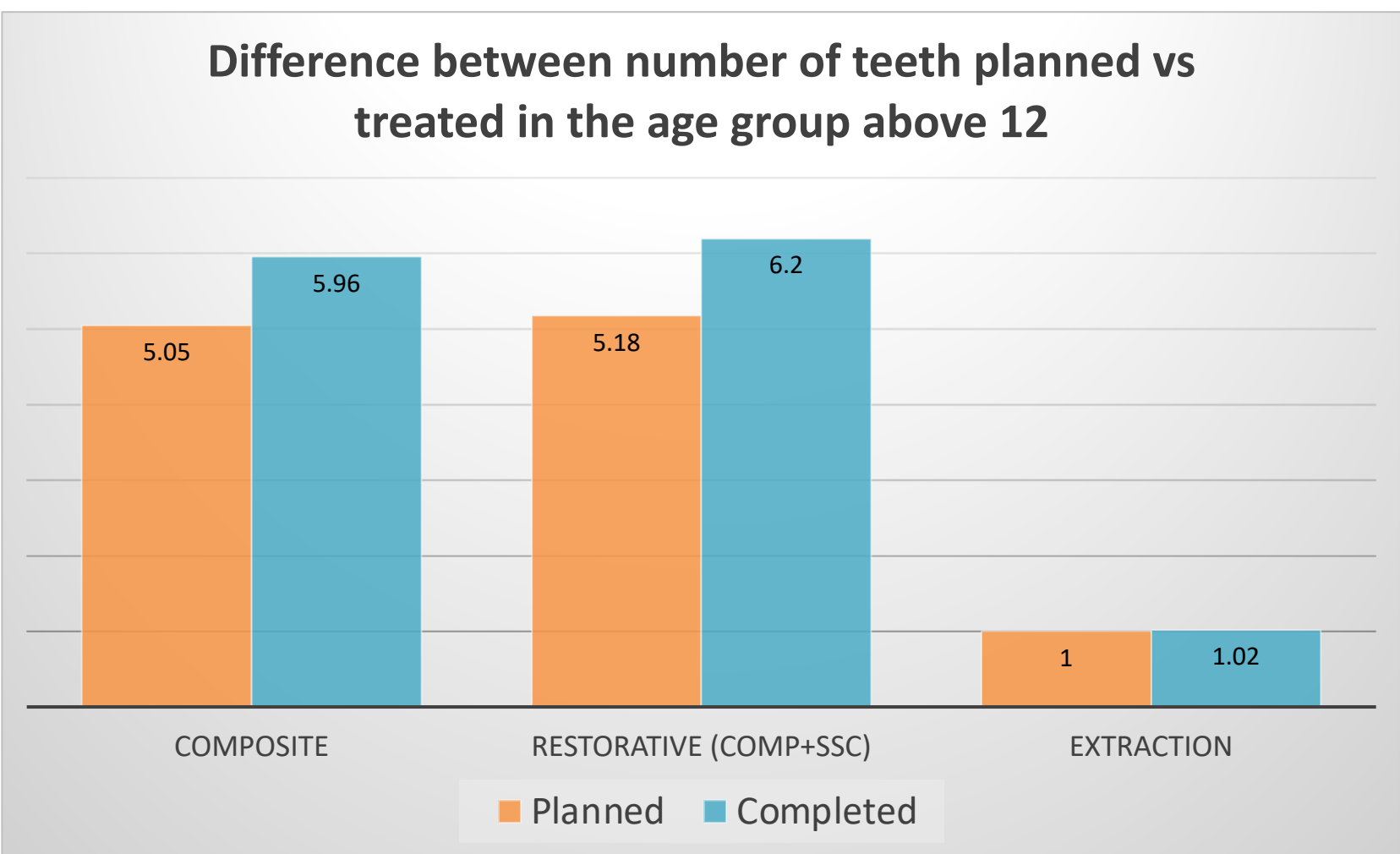
**Table 2. Difference between total number of teeth planned and treated in the OR**

Age groups	Number of teeth planned	Number of teeth treated	p-value*
Below 6	7.37 ± 3.74	8.25 ± 3.53	<0.001
7 to 11	7.02 ± 4.26	7.32 ± 4.02	0.54
Above 12	6.18 ± 6.415	7.22 ± 6.25	0.09

\* Pair samples T-test, statistical significance at p<0.05



**Fig 1.**

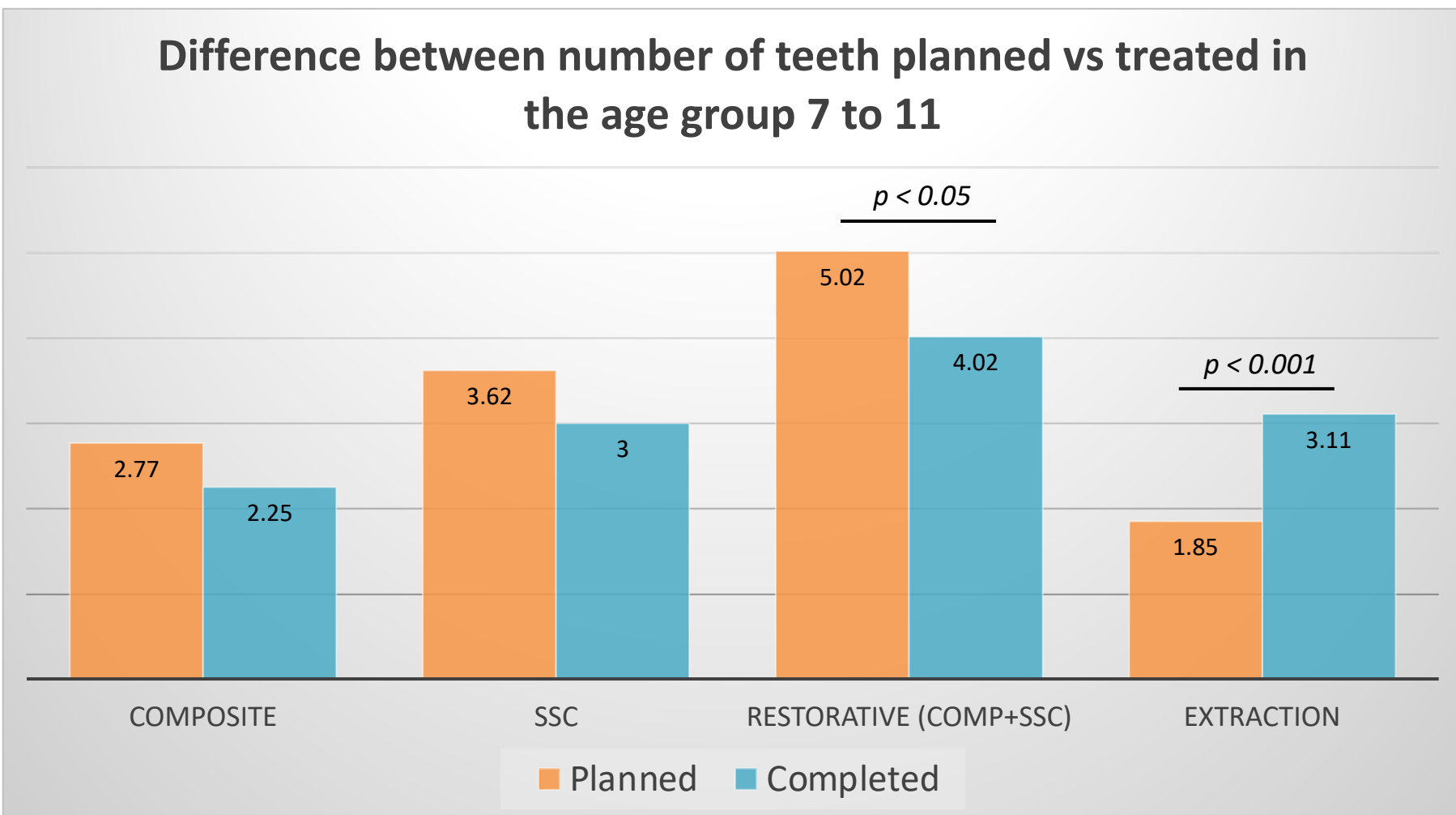


**Fig 3.**

**Table 4. Linear regression analysis on the association between OR wait time and difference in number of planned and treated teeth**

	Unstandardized Coefficients		Standardized Coefficients		p
	B	Std. Error	Beta	T	
Constant	0.809	0.329		2.461	0.015
Wait time (days)	-0.001	0.003	-0.014	-0.197	0.844

Dependant variable: Difference in number of planned and treated teeth



**Fig 2.**

**Table 3. OR treatment time by different age groups**

	Age 0-6	Age 7-11	Age 12 and above
Ontime	0.70%	1.80%	1.80%
Overtime	12.00%	8.90%	30.90%
Undertime	65.30%	69.60%	45.50%
Missing	22.00%	19.60%	21.80%

## Discussion

- The average OR wait time at FCH was shorter than what was reported at major children's hospitals in the US. <sup>5, 6</sup>
- Special health care needs patients waited significantly longer for the OR, which may be attributed to provider availability and multidisciplinary treatment provided (e.g. OMFS).
- The finding that majority of the OR cases finished early is in accordance with previous reports in the US. <sup>7</sup>
- Children under 6 had more treated (restored and extracted) teeth than initially planned (8.25 vs. 7.37), however, the difference is minimal in clinical significance.
- Among children ages 7 to 11, number of restored teeth in the OR was significantly lower than planned (4.02 vs. 5.02), however, this group received significantly more extractions than initially planned (3.11 vs. 1.85).
- There was no significant difference between number of planned and treated teeth among children age 12 and above.
- The effect of OR wait time on changes in treatment plan was not statistically significant in any age group.

## Conclusion

- OR wait time was not associated with changes in total number of teeth treated in comparison to what was initially planned.
- Mixed dentition group received more extractions and less restorative treatment in the OR compared to what was initially planned. This age group cases ran overtime the least. This may be attributed to more surgical, and less restorative work being performed.

## References

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