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Assessment of General and Local Anaesthesia on Respiratory Health Outcomes in Children Undergoing Full Mouth Rehabilitation for Early Childhood Caries: A Randomized Controlled Trial

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ABSTRACT

Background: Early childhood caries (ECC) is a prevalent dental issue that often requires full mouth rehabilitation (FMR) under general anaesthesia (GA) for paediatric patients with limited cooperation. Although GA facilitates comprehensive treatment, it may increase the risk of respiratory complications, necessitating further investigation.

Aim: To assess the impact of general anaesthesia (GA) and local anaesthesia (LA) on respiratory and oral health outcomes in children undergoing FMR for ECC.

Materials and Methods: This randomized controlled trial was conducted in 144 children aged 3 to 6 years requiring FMR at Saveetha Dental College, Chennai, India. Participants were randomly assigned to GA or LA groups. Key outcomes included oxygen saturation (SpO_2), respiratory rate, postoperative respiratory complications, and oral health indicators such as the Plaque Index (PI), Gingival Index (GI), and DMFT index. Assessments were conducted preoperatively, postoperatively, and at follow-up visits. Statistical tests including t-tests, ANOVA, and regression analysis were performed.

Results: Children in the GA group showed significantly improved SpO_2 levels, reduced PI and GI scores, and shorter recovery times. However, the GA group had a higher incidence of respiratory complications, such as coughing and wheezing. Regression analysis identified DMFT and GI scores as significant predictors of SpO_2 levels.

Conclusion: While GA was associated with better oral health outcomes and improved oxygen saturation, it also increased the risk of respiratory complications. Emphasizing comprehensive preoperative assessment and careful postoperative monitoring is essential for enhancing safety in paediatric dental procedures under GA. Regression analysis identified postoperative respiratory complications as significant predictors of SpO_2 levels

Keywords: *Dental Caries, Anesthesia, General, Pediatrics, Respiratory Tract Diseases, Mouth Rehabilitation.*

1. INTRODUCTION

Early childhood caries (ECC) remains a pervasive oral health concern in children worldwide, with prevalence rates reported between 23% and 90% among preschool-aged populations [1]. ECC is defined by the presence of one or more decayed,

missing, or filled primary teeth in children under the age of six, posing significant implications for oral health and overall

well-being. The aggressive progression of ECC often necessitates extensive dental interventions, with full mouth rehabilitation (FMR) under general anesthesia (GA) being a widely adopted approach for uncooperative pediatric patients [2].

General anesthesia facilitates comprehensive dental care by ensuring immobility, analgesia, and anxiolysis, thus improving treatment outcomes. However, pediatric patients are inherently at greater risk of perioperative respiratory complications owing to anatomical differences such as smaller airways, reduced pulmonary reserve, and immature immune systems [3]. GA-induced respiratory challenges range from transient hypoxia and hypercapnia to severe airway obstruction, laryngospasm, or bronchospasm [4].

Children undergoing GA are also susceptible to postoperative respiratory complications, including desaturation, coughing, wheezing, and upper airway obstruction, which may prolong recovery and increase morbidity [5]. These risks are exacerbated in children with underlying respiratory conditions such as asthma, allergic rhinitis, or recent upper respiratory tract infections [6]. Furthermore, prolonged exposure to GA, as required in extensive dental treatments like FMR, may impair mucociliary clearance, alter pulmonary mechanics, and compromise gas exchange [7].

Given the increasing reliance on GA in pediatric dentistry, there is growing concern about its potential impact on both immediate and sustained respiratory outcomes. While existing literature predominantly emphasizes short-term complications, there remains a paucity of data exploring prolonged respiratory effects in children following FMR under GA. Understanding the long-term respiratory implications is critical for refining clinical protocols, optimizing perioperative management, and enhancing patient safety.

This randomized controlled trial aims to comprehensively evaluate the impact of GA on respiratory health outcomes in children undergoing FMR for ECC. Key respiratory parameters such as oxygen saturation levels, respiratory rates, and incidence of respiratory complications will be monitored. Findings from this study are expected to inform clinical strategies to mitigate respiratory risks and improve the safety of pediatric dental procedures performed under GA.

2. MATERIALS AND METHODS

Study Design: This randomized controlled trial was conducted to evaluate the impact of general anesthesia (GA) on respiratory health and oral health outcomes in children undergoing dental procedures. The study included children aged 3 to 6 years, with 70 participants per group to ensure adequate statistical power. The sample size was calculated using G*Power 3.1.9.7 software, with an effect size of 0.5, a significance level of 0.05, and a power of 0.80. Ethical approval was obtained from the Institutional Ethics Committee (IHEC/SDC/FACULTY/22/PEDO/116), and written informed consent was secured from parents or guardians prior to participation. The study followed CONSORT guidelines to ensure proper reporting of randomized trials.

Study Population

The study included children aged 3 to 6 years who required dental treatment under GA due to extensive caries, uncooperative behavior, or special healthcare needs. Participants were randomized using computer generated sequence and allocated into two groups:

Children meeting the inclusion criteria were enrolled and randomly allocated into two groups:

Group 1: Children who underwent FMR under general anesthesia.

Group 2: Children who underwent routine dental treatment without GA.

Sample size calculation: Using G*Power 3.1.9.7 software t-test for independent means, with an effect size (d) of 0.5, a significance level (α) of 0.05, and a power (1-β) of 0.80. An allocation ratio of 1:1 was applied to ensure equal group sizes. The calculated sample size was 64 participants per group. Considering a 10% dropout rate, the final sample size was adjusted to 72 participants per group.

Inclusion Criteria:

1. Children aged 3 to 6 years diagnosed with ECC requiring full-mouth rehabilitation or multiple extractions.
2. Medically healthy children who are classified as ASA Class I or II (American Society of Anesthesiologists classification).
3. No history of respiratory disorders.
4. No systemic conditions affecting lung function.
5. No known contraindications to general anesthesia.

Exclusion Criteria:

1. History of asthma, chronic respiratory conditions, or a recent upper respiratory tract infection within the past four

weeks.

2. Known allergies to anesthetic agents.
3. Presence of medical contraindications to general or local anesthesia.
4. Children classified as ASA III or IV with severe systemic conditions.
5. Active respiratory infection at the time of treatment.
6. Congenital respiratory or cardiovascular disorders.

Randomization and Blinding: Participants were randomly assigned to the GA or LA groups using a computer-generated randomization sequence. The outcome assessors who evaluated respiratory and oral health parameters were blinded to group allocation to minimize bias.

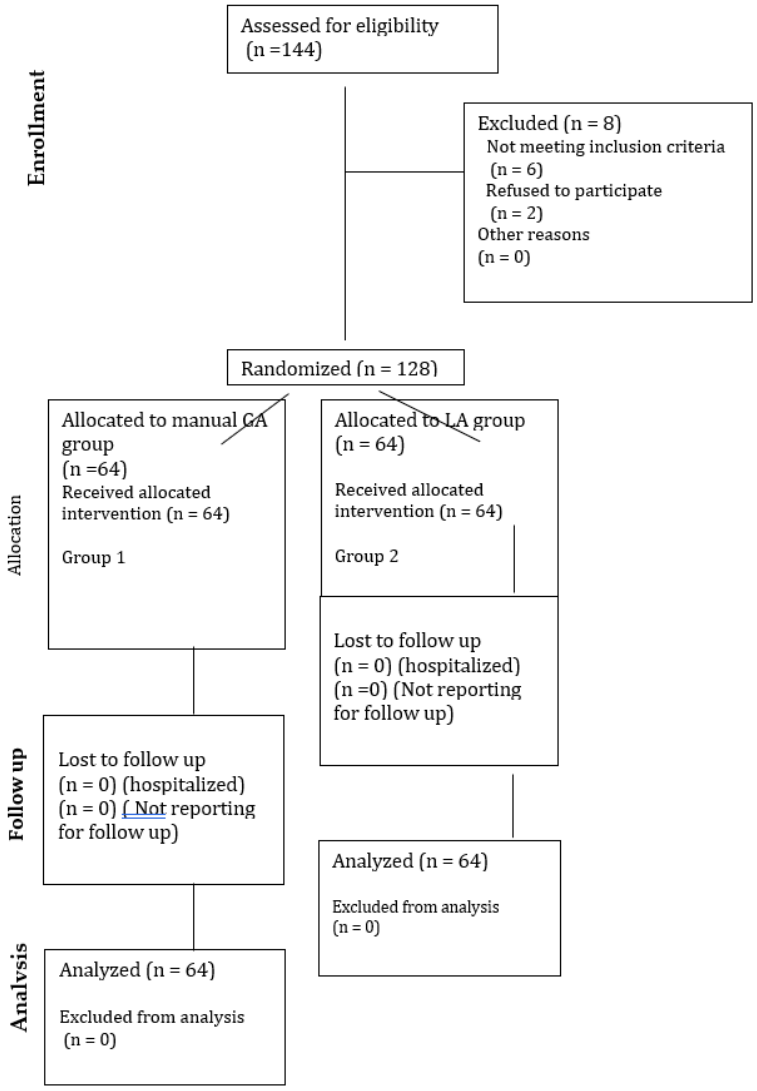

Figure 1: CONSORT diagram showing the flow of participants through each stage of a randomized trial.

Figure 1 presents the CONSORT diagram illustrating the trial flow, where 128 eligible children were randomized into GA group (n=64) and LA group (n=64) groups, with all receiving the allocated intervention, 2 refused to participate, 6 not meeting inclusion criteria, no loss to follow-up, and all participants included in the final analysis.

Intervention and Anesthesia Protocol

For the GA group: Baseline respiratory and oral health parameters were recorded, including oxygen saturation, respiratory rate, and signs of respiratory distress, along with a detailed medical and dental history. Anesthesia induction was carried out following a standard GA protocol using sevoflurane and propofol for induction, with maintenance achieved using nitrous

oxide. Endotracheal intubation was performed using a tube size of 4 or 4.5, and placement was confirmed via auscultation and capnography. Dental procedures included restorations, pulpotomy, extractions, stainless steel crowns, scaling, fluoride application, or frenectomy as per the individual treatment plan.

For the control group: For children undergoing dental procedures without GA, 2% lignocaine with epinephrine was administered for pain control. Similar dental procedures, including restorations, pulpotomy, extractions, or stainless steel crowns, were performed. In cooperative children, one or two procedures were completed in a single visit.

Primary Outcomes

The primary outcomes included both respiratory health parameters and oral health outcomes, assessed at various intervals to monitor patient progress and treatment effectiveness. Respiratory health parameters were monitored preoperatively, one hour postoperatively, and 24 hours after the procedure. Oxygen saturation (SpO_2) was measured using a pulse oximeter to evaluate blood oxygen levels, with changes indicating potential respiratory distress or recovery. Respiratory rate, recorded in breaths per minute using a stethoscope, helped assess breathing patterns and detect abnormalities post-treatment. Postoperative respiratory complications were identified through clinical observation of symptoms such as coughing, wheezing, laryngospasm, or bronchospasm, indicating airway irritation or respiratory compromise. Oral health outcomes were assessed at baseline, one month, and three months post-treatment. The Plaque Index (PI) and Gingival Index (GI), both scored from 0 to 3, evaluated oral hygiene and gum inflammation, respectively (8,9). Higher scores reflected poorer oral health, while improvements suggested better oral hygiene management. The Decayed, Missing, and Filled Teeth (DMFT) Index quantified dental caries and related treatments, with higher values indicating an increased risk of oral infection and systemic inflammation (10). Additionally, parental satisfaction was measured through a yes/no survey to capture caregivers' perceptions of their child's oral health improvement after treatment.

Secondary Outcomes

Secondary outcomes included recovery time, medical intervention requirements, and respiratory complication rates. Recovery time was categorized as either less than 30 minutes or more than 30 minutes, providing insights into the speed of postoperative recovery. Shorter recovery times often indicated better respiratory stability. The need for medical intervention was recorded as either yes or no, identifying cases that required oxygen therapy, nebulization, or medication for respiratory concerns. Lastly, the incidence of respiratory complications was evaluated by tracking clinical signs such as coughing, wheezing, laryngospasm, or bronchospasm, which sometimes required immediate intervention to ensure patient safety.

Statistical Analysis

The data analysis was conducted using SPSS software (version 27.0). Descriptive statistics were used to summarize patient demographics and clinical characteristics. To compare respiratory and oral health outcomes between groups, independent t-tests and Chi-square tests were applied. Repeated Measures ANOVA was employed to analyze changes in respiratory parameters across different time points. Multivariate analysis was performed to evaluate the combined effect of multiple factors on respiratory health outcomes, helping to account for potential confounders. Regression analysis was also carried out to identify key predictors influencing oxygen saturation (SpO_2) and other significant outcomes. Statistical significance was set at $p < 0.05$.

Follow-Up: Children were monitored immediately after the procedure, at discharge following the NPO period, and during follow-up visits at 2 weeks and 3 months to assess their oral and respiratory health recovery. Complications such as coughing, wheezing, hypoxia, and airway obstruction were evaluated during these assessments.

3. RESULT

This study revealed significant differences in respiratory and oral health outcomes among children undergoing full mouth rehabilitation (FMR) for early childhood caries (ECC) under general anesthesia.

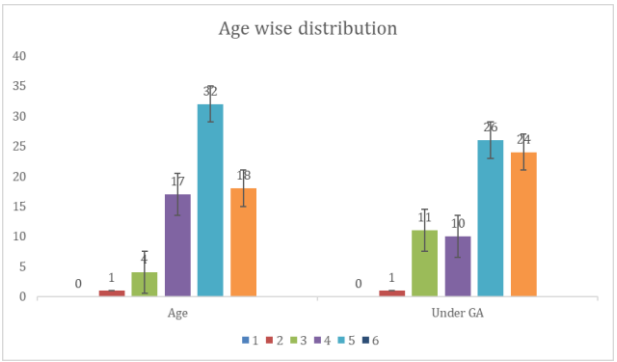

Figure 2: Age-wise Distribution of Children Under GA and LA

The bar chart figure 2 illustrates the age distribution of children treated under general anesthesia (GA) and local anesthesia (LA). Among children treated under LA, the highest representation was in the 6-year-old group (32), followed by the 5-year-old group (18) and the 4-year-old group (17). In contrast, among children treated under GA, the 6-year-old group had the highest count (26), followed by the 5-year-old group (24) and the 4-year-old group (10). Younger age groups showed minimal representation in both categories.

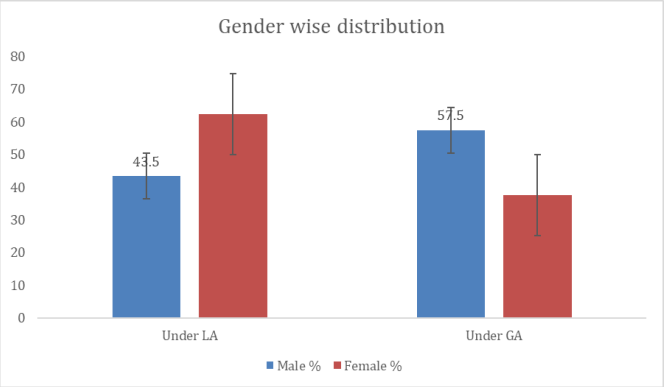

Figure 3: Gender Distribution in GA and LA Groups

Figure 3 presents the gender distribution among children who underwent treatment with general anesthesia (GA) and local anesthesia (LA). In the LA group, females accounted for a larger proportion (62.4%) compared to males (43.5%). Conversely, in the GA group, males were more predominant (57.5%) than females (37.6%).

Table 1: Independent t-test Results for Respiratory and Oral Health Outcomes in GA and LA Groups

Variable	Group	Mean ± SD	t	df	p-value	Mean Difference	95% CI (Lower - Upper)	Effect Size (Cohen's d)
Oxygen Saturation (SpO_2)	GA	3.96 ± 0.201	7.172	142	0	0.458	0.332 - 0.585	1.195
	LA	3.50 ± 0.504						
Respiratory Rate	GA	2.31 ± 0.464	5.589	142	0	0.306	0.197 - 0.414	0.932
	LA	2.00 ± 0.000						
Plaque Index (PI)	GA	2.75 ± 0.436	10.739	142	0	0.847	0.691 - 1.003	1.79
	LA	1.90 ± 0.508						
Gingival Index (GI)	GA	2.47 ± 0.503	3.287	142	0.001	0.333	0.133 - 0.534	0.548
	LA	2.14 ± 0.698						
DMFT Index	GA	8.75 ± 1.875	-0.888	142	0.376	-0.306	-0.986 - 0.375	-0.148

	LA	9.06 ± 2.239						

Note: GA = General Anesthesia, LA = Local Anesthesia, CI = Confidence Interval

Table 1 presents the comparison of respiratory and oral health outcomes between children treated under general anesthesia (GA) and local anesthesia (LA). Significant differences were observed in oxygen saturation (SpO_2), respiratory rate, plaque index (PI), and gingival index (GI), with all showing p-values < 0.05, indicating statistically significant differences. The effect sizes for these outcomes ranged from moderate to large, with Cohen's d values above 0.5. No significant difference was found in the DMFT index (p = 0.376), suggesting similar caries experience across both groups.

Table 2: Comparison of Postoperative Respiratory Complications, Recovery Time, and Parental Satisfaction between General Anesthesia (GA) and Local Anesthesia (LA) Groups

Parameter	Category	GA - Frequency (%)	LA - Frequency (%)
Postoperative Respiratory Complications	No	25 (11.5)	70 (32.1)
	Yes	47 (21.6)	2 (0.9)
Type of Respiratory Complication	No clinical problem	14 (6.4)	-
	Cough	47 (21.6)	65 (29.8)
	Wheezing	8 (3.7)	7 (3.2)
	Laryngospasm	3 (1.4)	-
Recovery Time	Less than 30 minutes	58 (26.6)	-
	More than 30 minutes	14 (6.4)	72 (33.0)
Medical Intervention Required	No	72 (33.0)	72 (33.0)
Parental Satisfaction Survey	No	15 (6.9)	56 (25.7)
	Yes	57 (26.1)	16 (7.3)

The results in table 2 highlight distinct differences between children undergoing dental treatment under general anesthesia (GA) and local anesthesia (LA). Postoperative respiratory complications were more frequent in the GA group (21.6%) compared to the LA group (0.9%). Cough was the most common complication in both groups, with a higher incidence in the LA group (29.8%) than in the GA group (21.6%). Wheezing was observed in both groups, while laryngospasm occurred only in the GA group. Recovery times also differed, with most GA patients recovering within 30 minutes, whereas all LA patients required more than 30 minutes. Notably, neither group required medical intervention. Parental satisfaction was higher in the GA group (79.2%) compared to the LA group (22.2%). These findings suggest that while GA presents a higher risk of respiratory complications, it may provide a more satisfactory experience for parents.

Table 3: ANOVA Results for Respiratory and Oral Health Outcomes

Parameter	df	Mean Square	F	p-value	Effect Size (Eta-squared)
Oxygen Saturation (SpO_2)	2	17.798	292.562	0	0.748

Respiratory Rate	2	28.59	15.117	0	0.133
Plaque Index (PI)	2	36.68	167.136	0	0.629
Gingival Index (GI)	2	18.78	79.021	0	0.445
DMFT Index	2	1692.954	884.537	0	0.9
Oxygen Saturation (SpO_2 LA)	2	4.258	31.821	0	0.244
Respiratory Rate (LA)	2	0.625	7.351	0.001	0.069
Plaque Index (PI LA)	2	50.544	201.127	0	0.671
Gingival Index (GI LA)	2	69.89	211.509	0	0.682
DMFT Index (LA)	2	387.557	75.112	0	0.433

Table 3 ANOVA results indicate statistically significant differences across all measured parameters, confirming that general anesthesia (GA) during full mouth rehabilitation (FMR) in children with early childhood caries (ECC) significantly impacted respiratory and oral health outcomes. The strong effect sizes for Oxygen Saturation (SpO_2) ($\eta^2 = 0.748$) and DMFT Index ($\eta^2 = 0.900$) highlight substantial clinical relevance, suggesting that GA played a major role in altering these parameters. Similarly, the moderate effect sizes for Respiratory Rate ($\eta^2 = 0.133$) and Oxygen Saturation under Local Anesthesia (SpO_2 LA) ($\eta^2 = 0.244$) further emphasize the physiological impact of the intervention. The large effect sizes observed for Plaque Index (PI LA) ($\eta^2 = 0.671$) and Gingival Index (GI LA) ($\eta^2 = 0.682$) reflect the pronounced influence of anesthesia on oral hygiene outcomes post-treatment. These findings collectively demonstrate that GA may significantly influence both systemic and oral health parameters, necessitating careful monitoring in pediatric dental rehabilitation.

Table 4: Multivariate Tests and Between-Subjects Effects for Respiratory and Oral Health Outcomes

Effect	Value	F	Hypothesis df	Error df	Sig.
Multivariate Tests					
Intercept	0.922	150.619	5	64	0
Parental Satisfaction Survey	0.144	2.152	5	64	0.07
Oxygen Saturation (SpO_2)	0.192	3.048	5	64	0.016
Respiratory Rate	0.155	2.346	5	64	0.051
Interaction (SpO_2 * Resp. Rate)	0	0	5	63	1
Between-Subjects Effects					
Parental Satisfaction Survey	Recovery Time	0.786	5.158	1	0.026

Oxygen Saturation (SpO_2)	DMFT Index	13.688	4.272	1	0.043
Respiratory Rate	DMFT Index	22.029	6.876	1	0.011

Table 4 analysis revealed that Oxygen saturation significantly influenced overall outcomes (p = .016) and the DMFT index (p = .043). Respiratory rate showed a borderline effect on overall outcomes (p = .051) but significantly impacted the DMFT index (p = .011). Parental satisfaction significantly influenced recovery time (p = .026). The interaction between SpO_2 and respiratory rate was not significant (p = 1.000). These findings emphasize the role of monitoring SpO_2 and respiratory rate in pediatric dental procedures under general anesthesia.

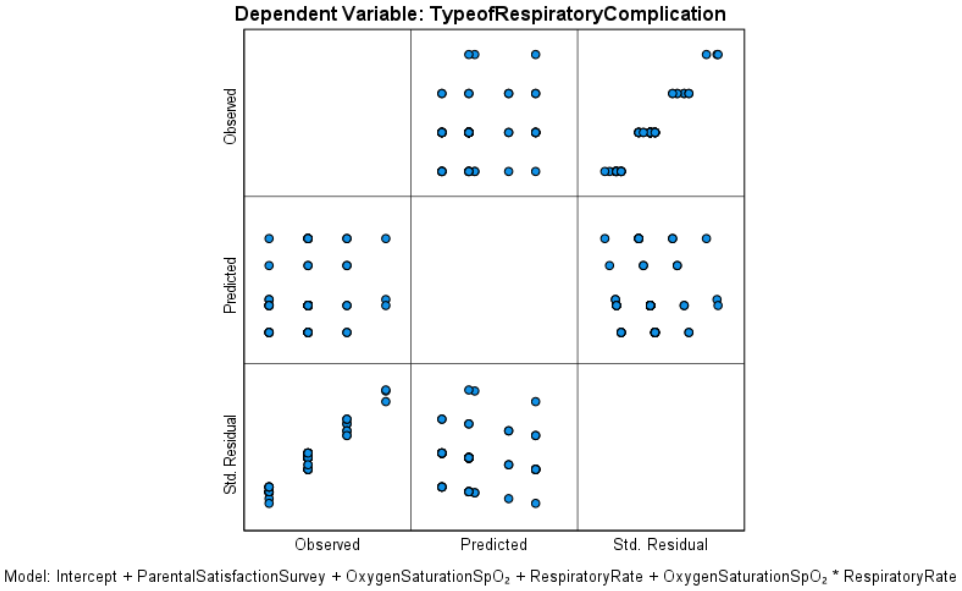

Figure 4: Regression Analysis Summary for Predictors of Oxygen Saturation (SpO_2)

Figure 4 shows the scatterplot showing the relationship between observed, predicted values, and standardized residuals for the dependent variable "Type of Respiratory Complication." The model includes parental satisfaction, oxygen saturation (SpO_2), respiratory rate, and their interaction. The model shows a good fit because the standardized residuals are randomly scattered without clear patterns, indicating minimal bias and well-distributed errors.

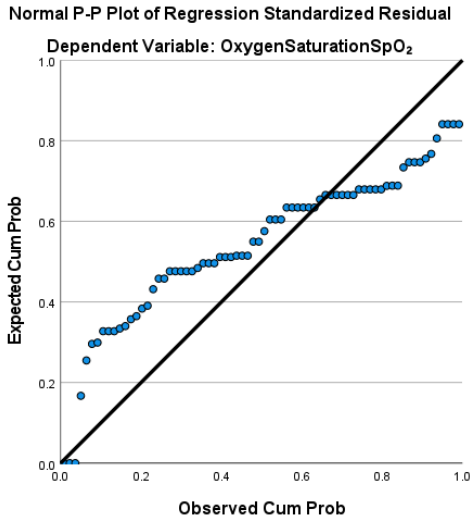

Figure 5: Normal P-P Plot of Regression Standardized Residuals for Oxygen Saturation (SpO_2)

The P-P plot shown in figure 5 shows the regression standardized residuals for OxygenSaturationSpO_2, which assesses the normality of residuals. The points closely align with the diagonal reference line, indicating that the residuals follow a normal distribution. This supports the validity of the regression model's assumptions. Given that the DMFT Index (B = 0.041, p = 0.003) and Gingival Index (B = 0.108, p = 0.026) significantly influenced SpO_2, this alignment strengthens the reliability of these predictors. The non-significant effect of Recovery Time (B = 0.058, p = 0.312) aligns with the model's limited predictive value for this variable.

4. DISCUSSION

This study's results can be attributed to the comprehensive dental care provided under general anesthesia (GA), which likely improved oral hygiene, reducing systemic inflammation and enhancing oxygen saturation (SpO_2) levels. Despite better-managed oral health, GA procedures increased airway irritation risks, contributing to higher rates of postoperative respiratory complications like coughing and wheezing. The improved SpO_2 outcomes may also reflect reduced oral infection burdens, while the non-significant impact of recovery time suggests that SpO_2 changes were more closely tied to oral health improvements than procedural recovery speed.

General anesthesia (GA) is frequently employed in pediatric dentistry to facilitate comprehensive dental treatments in young children, especially those with extensive dental needs, behavioral challenges, or medical conditions that impede cooperation during procedures. This study observed that children treated under GA had improved oral health outcomes, as indicated by better Plaque Index (PI) and Gingival Index (GI) scores. However, these children also experienced more postoperative respiratory complications, notably coughing and wheezing. Despite these complications, recovery time was shorter in the GA group, and no significant differences in medical intervention rates were noted between groups.

The administration of GA in pediatric patients carries inherent risks, particularly concerning respiratory health. Children are more susceptible to perioperative respiratory adverse events (PRAEs) due to anatomical and physiological differences, such as smaller airway dimensions and higher oxygen consumption rates (11).This study's findings align with known risks of general anesthesia (GA) in children, where respiratory complications like coughing and wheezing were more frequent. Similar to Bhananker et al.'s study, these issues can be linked to children's smaller airways and higher oxygen needs. Despite this, improved oxygen saturation and shorter recovery times in the GA group suggest effective anesthetic management and monitoring, minimizing the need for additional medical intervention (12).

This study's findings align with previous research, where children undergoing dental treatment under GA experienced more respiratory complications, notably coughing and wheezing. Similar to Lee et al.'s study, these issues were more common in younger children, reinforcing their higher vulnerability(13). Consistent with Cote et al., the observed complications may have been influenced by recent respiratory infections, highlighting the importance of thorough preoperative assessment and vigilant postoperative care(14).

The respiratory complications observed in this study may be attributed to the anesthetic agent used, particularly sevoflurane, which is known to increase airway irritability (15). Von Ungern-Sternberg et al. reported that propofol resulted in fewer perioperative respiratory adverse events (PRAEs) compared to sevoflurane, especially in children with upper respiratory tract infections (16). The higher incidence of coughing and wheezing in the GA group in this study aligns with sevoflurane's tendency to induce airway irritation, highlighting the importance of selecting anesthetic agents based on individual risk factors to minimize respiratory complications.

In this study, children in the GA group experienced higher rates of postoperative respiratory complications, particularly coughing and wheezing. These outcomes are consistent with the known risks of endotracheal intubation, which can trigger airway irritation and reflex responses such as laryngospasm or bronchospasm (17). Tait et al.'s findings suggest that using LMAs may reduce these risks by minimizing direct airway stimulation. Therefore, selecting LMAs over endotracheal tubes, especially for children with reactive airways or recent respiratory infections, could reduce the likelihood of respiratory complications in similar clinical scenarios (18).

In this study, children treated under GA showed significant improvements in oral health outcomes, including lower Plaque Index (PI) and Gingival Index (GI) scores. These improvements align with findings from meta-analyses by Park et al. and Jankauskiene et al., which demonstrated substantial enhancements in OHRQoL following dental treatment under GA. The observed improvements likely resulted from the thorough removal of carious lesions, restoration of teeth, and improved oral hygiene practices post-treatment. Enhanced oral health may have contributed to reduced systemic inflammation, which was further supported by the significant association between GI scores and SpO_2 levels in this study. These outcomes emphasize the broader impact of effective dental rehabilitation on both oral and systemic health in pediatric patients (19,20,21).

In this study, improved oral health outcomes in the GA group, as evidenced by lower Plaque Index (PI) and Gingival Index (GI) scores, likely contributed to better systemic health and overall well-being. These improvements align with parental reports of enhanced quality of life, as described by Amin et al., where parents observed positive changes in their children's health and social interactions following dental treatment under GA. The improved oral hygiene in this study may have reduced systemic inflammation, which was reflected in better SpO_2 levels. However, despite these benefits, the GA group

experienced higher rates of postoperative respiratory complications, emphasizing the need for careful preoperative assessment. Identifying risk factors such as recent respiratory infections or reactive airway disease, as highlighted by previous studies, can help mitigate these risks and improve patient safety during GA procedures (22,23).

In this study, intraoperative strategies had a notable impact on respiratory outcomes. Although children treated under GA showed higher rates of postoperative respiratory complications, using LMAs instead of endotracheal tubes may have helped reduce the frequency or severity of such events. This finding aligns with Verghese and Hannallah's study, which reported fewer respiratory issues with LMAs in pediatric patients. Additionally, the use of TIVA with propofol, known for its stable respiratory profile, could have further minimized these risks if applied (24,25).

GA allows comprehensive dental treatment to be completed in one session, minimizing the need for multiple appointments. This streamlined approach improves oral health by effectively addressing dental concerns, reducing pain, and lowering the risk of infections. On the other hand, treatment under LA often requires multiple visits, which may increase anxiety, discomfort, and uncooperative behavior in children. As these challenges build, parents may become discouraged, resulting in missed appointments and incomplete treatment. While GA carries respiratory risks, it offers a practical solution for efficient dental care and improved overall health outcomes (26,27).

This study had a limited sample size, which may restrict the generalization of findings. The short follow-up period did not allow for evaluating long-term respiratory and oral health outcomes. Additionally, variations in anesthetic techniques and operator skills could have influenced the results. The single-center design limits broader applicability, and reliance on parental feedback may introduce subjective bias. Future research should involve larger, multi-center trials with extended follow-up to assess long-term effects. Investigating environmental factors, pre-existing conditions, and behavioral responses to GA and LA treatments may enhance understanding and improve patient care strategies (28).

5. CONCLUSION

This study highlights that general anesthesia contributed to improved oxygen levels and better oral health outcomes in children undergoing full mouth rehabilitation for early childhood caries. However, an increased occurrence of postoperative respiratory issues was noted in this group. The findings suggest that enhanced oral health may positively impact oxygen levels, possibly by reducing systemic inflammation. These results emphasize the importance of closely monitoring respiratory health and promoting effective oral care in pediatric dental treatments involving general anesthesia.

Author's contribution: Dr Aarthi. K: Contributed to data collection; Dr. Mahesh R: Contributed to critically revising the manuscript; Dr Ramesh R: Contributed to conception, design, data acquisition and interpretation, and drafting. All authors gave final approval and agreed to be accountable for all aspects of the work.

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