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Impact of dental treatment under dental general anaesthesia on oral health-related quality of life in children: a prospective longitudinal study

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Impact of dental treatment under dental general anaesthesia on oral health-related quality of life in children: a prospective longitudinal study

Key points

Scientific rationale: Large prospective studies of oral health-related quality of life after dental general anaesthesia in Chinese children, particularly children with disabilities, are limited.

Key findings: Dental general anaesthesia was associated with rapid, sustained improvements in oral health-related quality of life across preschool children, school-aged children and children with disabilities.

Practical relevance: Treatment planning, especially the number of extractions, should be tailored to children's developmental stage and health status to maximise benefits.

Abstract

Dental general anaesthesia (DGA) enables comprehensive dental rehabilitation for children with severe caries or disabilities, but prospective evidence on oral health-related quality of life (OHRQoL) from large Chinese cohorts is limited. This single-centre prospective study assessed OHRQoL changes and associated factors after DGA in 418 children: 294 healthy preschool children (2–6 years), 60 healthy school-aged children (8–10 years) and 64 children with disabilities. OHRQoL was measured before treatment and at 1, 3 and 6 months after DGA using age-appropriate instruments (Early Childhood Oral Health Impact Scale [ECOHIS], Child Perceptions Questionnaire [CPQ], Child Oral Health Impact Profile-14 [COHIP-14] and Family Impact Scale-12 [FIS-12]). Changes were analysed using analysis of variance, and multivariable linear regression identified demographic, anaesthetic and treatment-related factors associated with change. OHRQoL improved in all groups, and improvements persisted to 6 months (all p <0.001). In preschool children, mean ECOHIS total score decreased from 11.01 at baseline to 5.19 at 1 month. In school-aged children, CPQ total score decreased from 13.02 at baseline to 5.75 at 6 months. In children with disabilities,

COHIP-14 scores increased and FIS-12 scores decreased after treatment. Factors associated with improvement differed by age and health status; extraction was associated with smaller gains in preschool children but larger gains in school-aged children. DGA was associated with marked, sustained improvements in OHRQoL across paediatric age groups and in children with disabilities. Treatment planning, particularly regarding extractions, should be individualised to developmental stage and health status.

Keywords: dental general anaesthesia; oral health-related quality of life; children; children with disabilities; prospective study

Introduction

Dental caries is the most common chronic disease of childhood, affecting approximately 600 million children worldwide.[1] Early childhood caries (ECC), defined as the presence of one or more decayed, missing (due to caries) or filled primary tooth surfaces in children up to 71 months of age,[2] adversely affects children's oral health-related quality of life (OHRQoL) and imposes a substantial burden on families and health systems.[3] According to the Fourth Chinese National Oral Health Survey, caries prevalence among 3-, 4- and 5-year-old Chinese children was 50.8%, 63.6% and 71.9% (mean decayed, missing and filled primary teeth [dmft] indices 2.28, 3.40 and 4.24, respectively), and 34.5% among 12-year-olds (mean decayed, missing and filled permanent teeth [DMFT] 0.86).[4] ECC therefore remains a major public health problem in China, and effective family-centred care pathways are urgently needed.

Children with intellectual and developmental disabilities (IDD) generally have poorer oral health and greater treatment needs than their healthy peers;[5] approximately 77% of adults with mild intellectual disability perceive that their oral condition affects their quality of life.[6] Because of dental anxiety and limited cooperation, dental general anaesthesia (DGA) is frequently the most effective and safest option for comprehensive dental rehabilitation in

young children and in children with disabilities.[7] DGA allows all necessary treatment, including multiple extractions, restorations, stainless steel crowns (SSCs) and pulp therapy, to be completed in a single session, resolving pain and infection and reducing the number of hospital visits.[8,9,10]

OHRQoL is a multidimensional construct reflecting the physical, psychological and social impact of oral conditions and their treatment.[11,12] Several instruments, including the Early Childhood Oral Health Impact Scale (ECOHIS), the Child Perceptions Questionnaire (CPQ), the Child Oral Health Impact Profile-14 (COHIP-14) and the Family Impact Scale-12 (FIS-12), have been used to evaluate OHRQoL before and after DGA.[13,14] Previous studies, mostly from Western and Middle-Eastern settings, have consistently reported improvements in OHRQoL after DGA;[15,16] however, large prospective cohorts from China are scarce, and few studies have examined the clinical and procedural factors associated with the magnitude of improvement, particularly in children with disabilities.

We therefore conducted a single-centre prospective longitudinal study in a large consecutive cohort of Chinese children undergoing DGA, including healthy preschool children, healthy school-aged children and children with disabilities. The aims were to quantify changes in OHRQoL from baseline to 1, 3 and 6 months after DGA using age-appropriate instruments, and to identify demographic, anaesthetic and treatment-related factors associated with OHRQoL change.

Methods

Study design and participants

This single-centre prospective longitudinal study was conducted at West China Hospital of Stomatology, Sichuan University, Chengdu, China, and is reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for cohort studies. Children scheduled for comprehensive dental treatment under DGA were

recruited consecutively between March 2024 and April 2025, and follow-up assessments were completed by October 2025. Children were eligible if they (1) were aged between 2 and 18 years; (2) met the institutional criteria for day-surgery dental treatment under general anaesthesia; (3) in the disabilities group, had a paediatric disability diagnosis recorded in the medical notes; (4) had a guardian able to complete the questionnaires and attend follow-up; and (5) had a guardian who provided written informed consent, with child assent obtained where appropriate. Of 577 children screened, 139 were excluded because their age was outside the inclusion criteria, leaving 438 eligible and enrolled; 20 were lost to follow-up, leaving 418 children for the final analysis (Fig. 1). The cohort comprised three subgroups: 294 healthy preschool children aged 2–6 years, 60 healthy school-aged children aged 8–10 years and 64 children with disabilities. The sample size was determined by the number of consecutively eligible children treated during the recruitment period; no formal *a priori* sample-size calculation was performed.

Data collection and outcome measures

Demographic data (age, sex, caregiver relationship, parental age and education), treatment details (numbers of extractions, root canal treatments, restorations, pulpotomies and SSCs; application of caries removal with fluoride varnish; fissure sealants) and anaesthetic data (anaesthesia duration, operation duration) were recorded by the treating dentists. OHRQoL was assessed preoperatively (T0) and at 1 (T1), 3 (T2) and 6 (T3) months postoperatively. Questionnaires were completed by parents or caregivers (proxy report) in paper form or through an online survey platform, with standardised instructions provided before completion.

For preschool children, OHRQoL was measured with the ECOHIS, a 13-item instrument (nine child-impact and four family-impact items) rated from 0 (never) to 4 (very often); 'do not know' responses were not scored. The total score ranges from 0 to 52, with higher scores indicating poorer OHRQoL.[17,18] For school-aged children, the CPQ was used, covering oral

symptoms, functional limitations, emotional well-being and social well-being over the preceding month, with higher scores indicating poorer OHRQoL.[19,20] For children with disabilities, the COHIP-14 and the FIS-12 were used; higher COHIP-14 scores indicate better OHRQoL, whereas higher FIS-12 scores indicate more negative family impact.

Statistical analysis

All data were analysed using R statistical software (version 4.4.2). Descriptive statistics were used to summarise baseline characteristics. Analysis of variance (ANOVA) was used to compare OHRQoL domain scores between baseline and each postoperative follow-up time point (T1, T2 and T3). To identify clinical and procedural factors associated with changes in OHRQoL after DGA, multivariable linear regression models were fitted separately for each subgroup, with the change in total or domain score from baseline (T0) to 6 months postoperatively (T3) as the dependent variable. The following covariates, selected *a priori* on clinical and epidemiological grounds to account for potential confounding, were included: age, sex, anaesthesia duration, operation duration, total number of treated teeth, caries removal with fluoride varnish, fissure sealant, pulpotomy, SSCs and extraction. The analysis included the 418 children who completed follow-up; no imputation was performed. All tests were two-sided, and statistical significance was set at $p < 0.05$.

Ethics

The study was approved by the institutional research ethics committee of West China Hospital of Stomatology, Sichuan University (approval no. WCHSIRB-D-2023-317), and was conducted in accordance with the Declaration of Helsinki. Guardians of all participants provided written informed consent, and children provided assent where appropriate.

Results

Participants

The final cohort comprised 418 children: 294 healthy preschool children (mean age 4.43 ± 0.76 years; 161 boys and 133 girls), 60 healthy school-aged children (mean age 8.52 ± 0.51 years; 32 boys and 28 girls) and 64 children with disabilities (mean age 7.12 ± 2.57 years; 47 boys and 17 girls). All 418 children included in the analysis completed the 6-month follow-up. Caregivers were predominantly mothers (81%); 71% of parents were aged 31–40 years, and 73% had a university degree or postgraduate education (Table 1).

Changes in OHRQoL after DGA

In healthy preschool children, the mean ECOHIS total score decreased from 11.01 at baseline to 5.19 at 1 month after DGA (p <0.001), and the improvement was maintained at 3 and 6 months. Preoperatively, the burden was concentrated in the oral function and family impact domains, reflecting eating difficulties related to tooth pain and parental guilt and anxiety.

In healthy school-aged children, the mean CPQ total score decreased from 13.02 at baseline to 5.75 at 6 months (p <0.001). Preoperatively, the oral symptoms domain was the most affected (mean score 4.87), followed by oral function (3.27) and emotional status (3.02), indicating severe oral problems and substantial psychosocial impact in this age group. After DGA, scores in all domains decreased; the emotional well-being score fell from 3.02 to 1.23 at 1 month, indicating rapid psychological recovery.

In children with disabilities, COHIP-14 scores increased and FIS-12 scores decreased after treatment (both p <0.001), indicating improved oral health and function and reduced psychological and economic burden for families. Despite severe preoperative oral problems, most children in this group did not brush their teeth twice or more daily, highlighting considerable room for improvement in oral hygiene habits.

Factors associated with OHRQoL change

To identify clinical and procedural factors associated with changes in OHRQoL after DGA, multivariable linear regression analyses were performed separately for each subgroup, with the change in score from baseline to 6 months postoperatively as the dependent variable (Tables 3 and 4).

In the healthy preschool group, extraction was positively associated with the change score ($\beta = 0.497$, $p < 0.001$), indicating that a greater number of extracted teeth was associated with a smaller improvement in OHRQoL; the total number of treated teeth was negatively associated with the change score ($\beta = -0.144$, $p = 0.036$), indicating greater improvement with more treated teeth. Age, sex, anaesthesia duration, operation duration, caries removal with fluoride varnish, fissure sealant, pulpotomy and SSCs were not statistically significant (all $p \geq 0.05$; Table 3).

In the healthy school-aged group, extraction was negatively associated with the change score ($\beta = -0.662$, $p = 0.005$), indicating that a greater number of extracted teeth was associated with a larger improvement in OHRQoL. Caries removal with fluoride varnish ($\beta = -3.032$, $p = 0.013$) and fissure sealant ($\beta = -0.417$, $p = 0.029$) were also negatively associated with the change score, reflecting positive effects on OHRQoL. The remaining variables were not statistically significant (all $p \geq 0.05$; Table 3).

In children with disabilities, in the COHIP-14 oral symptoms domain, extraction ($\beta = -0.285$, $p = 0.026$) and caries removal with fluoride varnish ($\beta = 1.958$, $p = 0.001$) were statistically significant; in the oral function domain, only extraction was significant ($\beta = -0.257$, $p < 0.001$). These associations indicate that a greater number of extractions was associated with smaller COHIP-14 gains (poorer outcomes), whereas preventive procedures were associated with larger gains. In the FIS-12, older age was associated with smaller improvements in parental emotions ($\beta = -0.302$, $p = 0.032$) and family conflict ($\beta = -0.136$, $p = 0.006$). In the financial burden domain, the change score was negatively associated with

extraction (β = -0.083, p <0.001), operation duration (β = -0.029, p <0.001) and the number of SSCs (β = -0.071, p = 0.025), and positively associated with anaesthesia duration (β = 0.030, p <0.001) and the total number of treated teeth (β = 0.064, p = 0.010); the total number of treated teeth was also negatively associated with family conflict (β = -0.089, p = 0.008). No significant associations were observed in the family activity domain (Table 4).

Discussion

In this large prospective cohort of 418 Chinese children, comprehensive dental treatment under DGA was associated with marked and sustained improvements in OHRQoL across healthy preschool children, healthy school-aged children and children with disabilities. In all groups, the greatest change occurred within the first month after treatment and was maintained at 3 and 6 months. These findings corroborate previous prospective studies and a recent meta-analysis.[10,15,21] They extend this evidence by quantifying age- and disability-specific determinants of improvement within a single contemporary Chinese cohort.

Tooth extraction was the most consistent treatment-related factor, but its association with OHRQoL change differed by age and health status. In preschool children, a greater number of extractions was associated with smaller improvements. At this developmental stage, quality of life is dominated by immediate physical comfort and parental perception: temporary difficulties in chewing, speech and appearance after extraction, together with prolonged edentulous spaces before permanent tooth eruption, may generate parental anxiety about arch integrity and space maintenance.[22] In school-aged children, by contrast, more extractions were associated with larger improvements. Primary tooth loss is a normal developmental process in the mixed dentition; extraction eliminates pain and infection, reduces repeated dental visits and associated school absenteeism,[23] and is readily accepted by peers.

Children with disabilities derived substantial benefit from DGA: COHIP-14 scores improved and FIS-12 scores declined, indicating better oral function and reduced caregiver

and family burden. However, a greater number of extractions was associated with smaller gains in the oral symptoms and function domains. Multiple extractions may compound pre-existing feeding difficulties, drooling and articulation problems, complicate oral hygiene and space management, and increase parental care burden.[24] Clinically, this suggests that restorative alternatives (e.g. SSCs and pulp therapy) should be prioritised over extraction wherever feasible in this population, and that space maintenance and oral-care support should be planned explicitly before and after treatment.

Other findings were consistent with a dose-response relationship between disease burden and benefit. In preschool children, a greater total number of treated teeth was associated with larger improvements, presumably reflecting greater preoperative symptom burden. In school-aged children, preventive procedures (caries removal with fluoride varnish and fissure sealants) were associated with larger improvements, in keeping with their effect on caries control. Among families of children with disabilities, the financial burden domain was associated with treatment extent and duration, suggesting that treatment plans that limit the number of procedures and visits may also alleviate family costs.

This study has several strengths, including its prospective design with four assessment points, the large consecutive preschool sample, the inclusion of a relatively understudied group of children with disabilities, and the use of standardised, internationally used instruments. Several limitations must be acknowledged. First, it was a single-centre study, which limits generalisability to other regions and healthcare settings. Second, the design was a before-after comparison without an untreated control group; improvements may partly reflect natural recovery or regression to the mean, and causal attribution should be cautious. Third, for preschool children and children with disabilities, OHRQoL was reported by proxy (parents or caregivers), and discrepancies between proxy and child self-report are well recognised.[25] Caregiver age and education may further influence responses. Fourth, the school-aged and

disability subgroups were relatively small, and the multivariable models may have been underpowered to detect modest associations; the domain-level analyses were exploratory and should be interpreted cautiously. Fifth, the sample size was not formally calculated *a priori*, and anaesthesia and operation durations were correlated, so the estimates for these two variables should be interpreted with caution. Future multicentre studies with longer follow-up, child self-report measures and formal sample-size planning are warranted.

Conclusion

In conclusion, dental treatment under DGA was associated with marked and sustained improvements in OHRQoL in children, with benefits observed across oral symptoms, function, psychosocial well-being, parental distress and family financial burden. The determinants of improvement differed by age and health status, indicating that treatment decisions, particularly regarding the extent of extractions, should be individualised. These findings support DGA as an effective, family-centred treatment pathway and provide practical guidance for treatment planning in paediatric dentistry.

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Author contributions

Li Zhang: conceptualisation, project administration, methodology, investigation, data curation, funding, writing – original draft. Xiaohan Lv: conceptualisation, methodology, investigation, data curation, visualisation, writing – original draft. Yumin Wang: conceptualisation, methodology, formal analysis, validation, writing – review and editing. Yan Wang, Ran Yang and Qiong Zhang: investigation, data curation, writing – review and editing. Yuan Zhou and Xin Zhou: investigation, data curation. Jing Zou: supervision, writing

– review and editing. Ruijie Huang: conceptualisation, supervision, writing – review and editing, corresponding author. All authors read and approved the final manuscript.

Competing interests

The authors declare no competing interests.

Consent to publish

Not applicable. No identifiable individual information or images are presented in this article.

Data availability

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

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Figure legends

Fig. 1 Flow diagram of participant screening, eligibility, follow-up and analysis. Numbers show children assessed for eligibility, excluded, lost to follow-up and analysed, with the three study subgroups; n, number of children.

Tables

Table 1. Characteristics of children and caregivers

Characteristic	2–6 years (n = 294)	8–10 years (n = 60)	Children with disabilities (n = 64)
Child age (years), mean ± SD	4.43 ± 0.76	8.52 ± 0.51	7.12 ± 2.57
Sex, n (%)			
Boys	161 (54.8)	32 (53.3)	47 (73.4)
Girls	133 (45.2)	28 (46.7)	17 (26.6)
Caregiver age (years), n (%)			
20–30	54 (18.4)	3 (5.0)	6 (9.4)
31–40	210 (71.4)	40 (66.7)	48 (75.0)
41–50	28 (9.5)	15 (25.0)	9 (14.1)
51–60	2 (0.7)	2 (3.3)	0 (0.0)
>60	0 (0.0)	0 (0.0)	1 (1.6)
Caregiver relationship, n (%)			
Mother	239 (81.3)	47 (78.3)	51 (79.7)
Father	54 (18.4)	12 (20.0)	11 (17.2)
Other	1 (0.3)	1 (1.7)	2 (3.1)
Caregiver education, n (%)			
Middle school or below	22 (7.5)	5 (8.3)	6 (9.4)
High school	58 (19.7)	9 (15.0)	13 (20.3)
University	183 (62.2)	41 (68.3)	40 (62.5)
Master's degree or above	31 (10.5)	5 (8.3)	5 (7.8)
Family income (CNY), n (%)			
≤40,000	34 (11.6)	10 (16.7)	8 (12.5)
50,000–150,000	79 (26.9)	22 (36.7)	23 (35.9)
160,000–500,000	90 (30.6)	14 (23.3)	15 (23.4)
>500,000	18 (6.1)	1 (1.7)	4 (6.3)
Refused to answer	73 (24.8)	13 (21.7)	14 (21.9)

Values are n (%) unless otherwise stated. CNY, Chinese yuan; n, number of children; SD, standard deviation.

Table 2. Oral health-related quality of life scores before and 1, 3 and 6 months after dental general anaesthesia

Domain	Preoperative, mean ± SD (median)	1 month, mean ± SD (median)	3 months, mean ± SD (median)	6 months, mean ± SD (median)	*p* value
2–6 years group (n = 294)					
Total score	11.01 ± 6.16 (10.00)	5.19 ± 5.78 (3.00)	3.86 ± 5.56 (1.00)	3.67 ± 5.38 (0.00)	<0.001
Oral symptoms	1.39 ± 1.01 (2.00)	0.59 ± 0.73 (0.00)	0.41 ± 0.67 (0.00)	0.47 ± 0.72 (0.00)	<0.001
Oral function	2.02 ± 2.24 (1.00)	1.15 ± 1.73 (0.00)	0.95 ± 1.71 (0.00)	0.92 ± 1.74 (0.00)	<0.001
Emotional status	1.12 ± 1.39 (1.00)	0.58 ± 1.03 (0.00)	0.40 ± 0.87 (0.00)	0.39 ± 0.85 (0.00)	<0.001
Social functioning	0.59 ± 1.11 (0.00)	0.39 ± 0.84 (0.00)	0.34 ± 0.84 (0.00)	0.35 ± 0.80 (0.00)	0.003
Parental guilt	3.51 ± 1.79 (4.00)	1.35 ± 1.65 (1.00)	0.95 ± 1.40 (0.00)	0.84 ± 1.30 (0.00)	<0.001
Financial burden	2.38 ± 1.67 (2.00)	1.14 ± 1.41 (1.00)	0.81 ± 1.27 (0.00)	0.69 ± 1.14 (0.00)	<0.001
8–10 years group (n = 60)					
Total score	13.02 ± 10.09 (11.00)	7.37 ± 7.50 (5.00)	6.72 ± 7.42 (4.00)	5.75 ± 7.33 (3.00)	<0.001
Oral symptoms	4.87 ± 3.46 (4.50)	2.95 ± 2.56 (2.50)	2.83 ± 2.53 (2.00)	2.77 ± 2.75 (2.00)	<0.001
Oral function	3.27 ± 3.44 (2.00)	2.20 ± 2.68 (1.00)	1.93 ± 2.40 (1.00)	1.57 ± 2.68 (0.50)	0.008
Emotional status	3.02 ± 3.69 (1.50)	1.23 ± 2.30 (0.00)	1.27 ± 3.22 (0.00)	0.90 ± 2.13 (0.00)	<0.001
Social functioning	1.87 ± 3.35 (0.00)	0.98 ± 1.85 (0.00)	0.68 ± 1.53 (0.00)	0.52 ± 1.59 (0.00)	0.005
Children with disabilities (n = 64)					
COHIP-14 oral symptoms	23.38 ± 5.19 (23.50)	31.16 ± 5.74 (31.00)	32.52 ± 5.60 (33.00)	32.31 ± 5.73 (31.50)	<0.001
COHIP-14 oral function	9.53 ± 2.73 (9.50)	12.75 ± 2.65 (12.00)	12.89 ± 2.42 (13.00)	13.66 ± 2.71 (15.00)	<0.001
FIS-12 family activity	7.50 ± 4.23 (7.50)	4.16 ± 4.54 (2.00)	2.72 ± 3.01 (2.00)	1.63 ± 2.99 (0.00)	<0.001
FIS-12 parental emotions	6.27 ± 3.71 (7.00)	3.16 ± 3.66 (2.00)	2.20 ± 2.78 (0.50)	1.41 ± 2.48 (0.00)	<0.001
FIS-12 family conflict	1.14 ± 1.48 (0.00)	0.63 ± 1.28 (0.00)	0.36 ± 0.84 (0.00)	0.23 ± 0.77 (0.00)	<0.001
FIS-12 financial burden	1.05 ± 1.25 (0.00)	0.56 ± 0.83 (0.00)	0.39 ± 0.68 (0.00)	0.25 ± 0.59 (0.00)	<0.001

Values are mean ± SD (median). Higher ECOHIS and CPQ scores indicate poorer OHRQoL; higher COHIP-14 scores indicate better OHRQoL; higher FIS-12 scores indicate greater family impact. ANOVA, analysis of variance; COHIP-14, Child Oral Health Impact Profile-14; CPQ, Child Perceptions Questionnaire; ECOHIS, Early Childhood Oral Health Impact Scale; FIS-12, Family Impact Scale-12; n, number of children; OHRQoL, oral health-related quality of life; SD, standard deviation.

Table 3. Factors associated with change in total oral health-related quality of life score after dental general anaesthesia in the 2–6 year and 8–10 year groups

Variable	β (SE)	95% CI	*t*	*p* value
2–6 years group (n = 294)				
Age	-0.402 (0.217)	-0.827, 0.023	-1.852	0.064
Sex	0.448 (0.344)	-0.226, 1.122	1.301	0.193
Anaesthesia duration	-0.001 (0.021)	-0.042, 0.040	-0.043	0.966
Operation duration	0.008 (0.024)	-0.039, 0.055	0.336	0.737
Total number of treated teeth	-0.144 (0.069)	-0.279, -0.009	-2.095	0.036
Caries removal with fluoride varnish	0.131 (0.169)	-0.200, 0.462	0.777	0.437
Fissure sealant	-0.088 (0.128)	-0.339, 0.163	-0.688	0.492
Pulpotomy	-0.017 (0.100)	-0.213, 0.179	-0.173	0.863
SSC	0.016 (0.119)	-0.217, 0.249	0.131	0.895
Extraction	0.497 (0.106)	0.289, 0.705	4.705	<0.001
8–10 years group (n = 60)				
Age	-0.128 (1.076)	-2.237, 1.981	-0.118	0.906
Sex	1.241 (1.086)	-0.888, 3.370	1.143	0.254
Anaesthesia duration	-0.042 (0.070)	-0.179, 0.095	-0.600	0.549
Operation duration	0.072 (0.077)	-0.079, 0.223	0.936	0.350
Total number of treated teeth	0.145 (0.206)	-0.259, 0.549	0.702	0.483
Caries removal with fluoride varnish	-3.032 (1.208)	-5.400, -0.664	-2.509	0.013
Fissure sealant	-0.417 (0.190)	-0.789, -0.045	-2.191	0.029
Pulpotomy	-0.014 (0.610)	-1.210, 1.182	-0.023	0.982
SSC	0.385 (0.554)	-0.701, 1.471	0.695	0.488
Extraction	-0.662 (0.233)	-1.119, -0.205	-2.837	0.005

β, unstandardised regression coefficient; CI, confidence interval; n, number of children; SE, standard error; SSC, stainless steel crown. Models included age, sex, anaesthesia duration, operation duration, total number of treated teeth, caries removal with fluoride varnish, fissure sealant, pulpotomy, SSC and extraction as covariates, selected *a priori* on clinical and epidemiological grounds. The dependent variable was change in total score from baseline to 6 months after treatment.

Table 4. Factors associated with changes in oral health-related quality of life subscale scores after dental general anaesthesia in children with disabilities (n = 64)

Variable	β (SE)	95% CI	*t*	*p* value
COHIP-14				
Oral symptoms				
Age	0.082 (0.232)	-0.373, 0.537	0.355	0.723
Sex	-0.903 (0.768)	-2.408, 0.602	-1.176	0.241
Anaesthesia duration	-0.001 (0.045)	-0.089, 0.087	-0.020	0.984
Operation duration	0.036 (0.049)	-0.060, 0.132	0.738	0.462
Total number of treated teeth	0.227 (0.156)	-0.079, 0.533	1.456	0.147
Caries removal with fluoride varnish	1.958 (0.589)	0.804, 3.112	3.322	0.001
Fissure sealant	0.170 (0.144)	-0.112, 0.452	1.178	0.240
Pulpotomy	0.412 (0.255)	-0.088, 0.912	1.617	0.107
SSC	0.099 (0.200)	-0.293, 0.491	0.497	0.619
Extraction	-0.285 (0.127)	-0.534, -0.036	-2.247	0.026
Oral function				
Age	0.160 (0.110)	-0.056, 0.376	1.446	0.149
Sex	-0.253 (0.365)	-0.968, 0.462	-0.693	0.489
Anaesthesia duration	-0.027 (0.021)	-0.068, 0.014	-1.268	0.206
Operation duration	0.030 (0.023)	-0.015, 0.075	1.285	0.200
Total number of treated teeth	0.129 (0.074)	-0.016, 0.274	1.732	0.084
Caries removal with fluoride varnish	0.370 (0.280)	-0.179, 0.919	1.319	0.188
Fissure sealant	0.027 (0.069)	-0.108, 0.162	0.395	0.693
Pulpotomy	0.120 (0.121)	-0.117, 0.357	0.988	0.324
SSC	-0.035 (0.095)	-0.221, 0.151	-0.371	0.711
Extraction	-0.257 (0.060)	-0.375, -0.139	-4.263	<0.001
FIS-12				
Family activity				
Age	-0.158 (0.166)	-0.483, 0.167	-0.951	0.343
Sex	0.393 (0.548)	-0.681, 1.467	0.717	0.474
Anaesthesia duration	0.023 (0.032)	-0.040, 0.086	0.719	0.473
Operation duration	-0.026 (0.035)	-0.095, 0.043	-0.760	0.448
Total number of treated teeth	0.022 (0.111)	-0.196, 0.240	0.196	0.845
Caries removal with fluoride varnish	-0.604 (0.421)	-1.429, 0.221	-1.435	0.153
Fissure sealant	0.020 (0.103)	-0.182, 0.222	0.199	0.843
Pulpotomy	-0.213 (0.182)	-0.570, 0.144	-1.167	0.244
SSC	-0.025 (0.143)	-0.305, 0.255	-0.178	0.859
Extraction	0.037 (0.091)	-0.141, 0.215	0.404	0.686
Parental emotions				
Age	-0.302 (0.140)	-0.576, -0.028	-2.161	0.032
Sex	0.602 (0.463)	-0.305, 1.509	1.301	0.194
Anaesthesia duration	0.023 (0.027)	-0.030, 0.076	0.850	0.396
Operation duration	-0.020 (0.029)	-0.077, 0.037	-0.690	0.491
Total number of treated teeth	0.097 (0.094)	-0.087, 0.281	1.026	0.306
Caries removal with fluoride varnish	-0.448 (0.355)	-1.144, 0.248	-1.261	0.209
Fissure sealant	0.085 (0.087)	-0.086, 0.256	0.976	0.330
Pulpotomy	-0.012 (0.154)	-0.314, 0.290	-0.075	0.940
SSC	-0.123 (0.120)	-0.358, 0.112	-1.020	0.309
Extraction	-0.045 (0.076)	-0.194, 0.104	-0.586	0.558

Variable	β (SE)	95% CI	*t*	*p* value
Family conflict				
Age	-0.136 (0.049)	-0.232, -0.040	-2.751	0.006
Sex	0.053 (0.163)	-0.266, 0.372	0.323	0.747
Anaesthesia duration	0.009 (0.010)	-0.011, 0.029	0.962	0.337
Operation duration	-0.006 (0.010)	-0.026, 0.014	-0.582	0.561
Total number of treated teeth	-0.089 (0.033)	-0.154, -0.024	-2.693	0.008
Caries removal with fluoride varnish	0.057 (0.125)	-0.188, 0.302	0.454	0.650
Fissure sealant	0.017 (0.031)	-0.044, 0.078	0.558	0.577
Pulpotomy	-0.036 (0.054)	-0.142, 0.070	-0.672	0.502
SSC	-0.041 (0.042)	-0.123, 0.041	-0.966	0.335
Extraction	0.017 (0.027)	-0.036, 0.070	0.624	0.533
Financial burden				
Age	-0.054 (0.036)	-0.125, 0.017	-1.486	0.139
Sex	-0.053 (0.120)	-0.288, 0.182	-0.443	0.658
Anaesthesia duration	0.030 (0.007)	0.016, 0.044	4.205	<0.001
Operation duration	-0.029 (0.008)	-0.045, -0.013	-3.770	<0.001
Total number of treated teeth	0.064 (0.024)	0.017, 0.111	2.607	0.010
Caries removal with fluoride varnish	-0.045 (0.092)	-0.225, 0.135	-0.488	0.626
Fissure sealant	0.002 (0.023)	-0.043, 0.047	0.096	0.924
Pulpotomy	-0.044 (0.040)	-0.122, 0.034	-1.092	0.276
SSC	-0.071 (0.031)	-0.132, -0.010	-2.260	0.025
Extraction	-0.083 (0.020)	-0.122, -0.044	-4.194	<0.001

β, unstandardised regression coefficient; CI, confidence interval; COHIP-14, Child Oral Health Impact Profile-14; FIS-12, Family Impact Scale-12; n, number of children; OHRQoL, oral health-related quality of life; SE, standard error; SSC, stainless steel crown. Models included age, sex, anaesthesia duration, operation duration, total number of treated teeth, caries removal with fluoride varnish, fissure sealant, pulpotomy, SSC and extraction as covariates, selected *a priori* on clinical and epidemiological grounds. Dependent variables were changes in each subscale score from baseline to 6 months after treatment. Higher COHIP-14 scores indicate better OHRQoL; higher FIS-12 scores indicate greater family impact.

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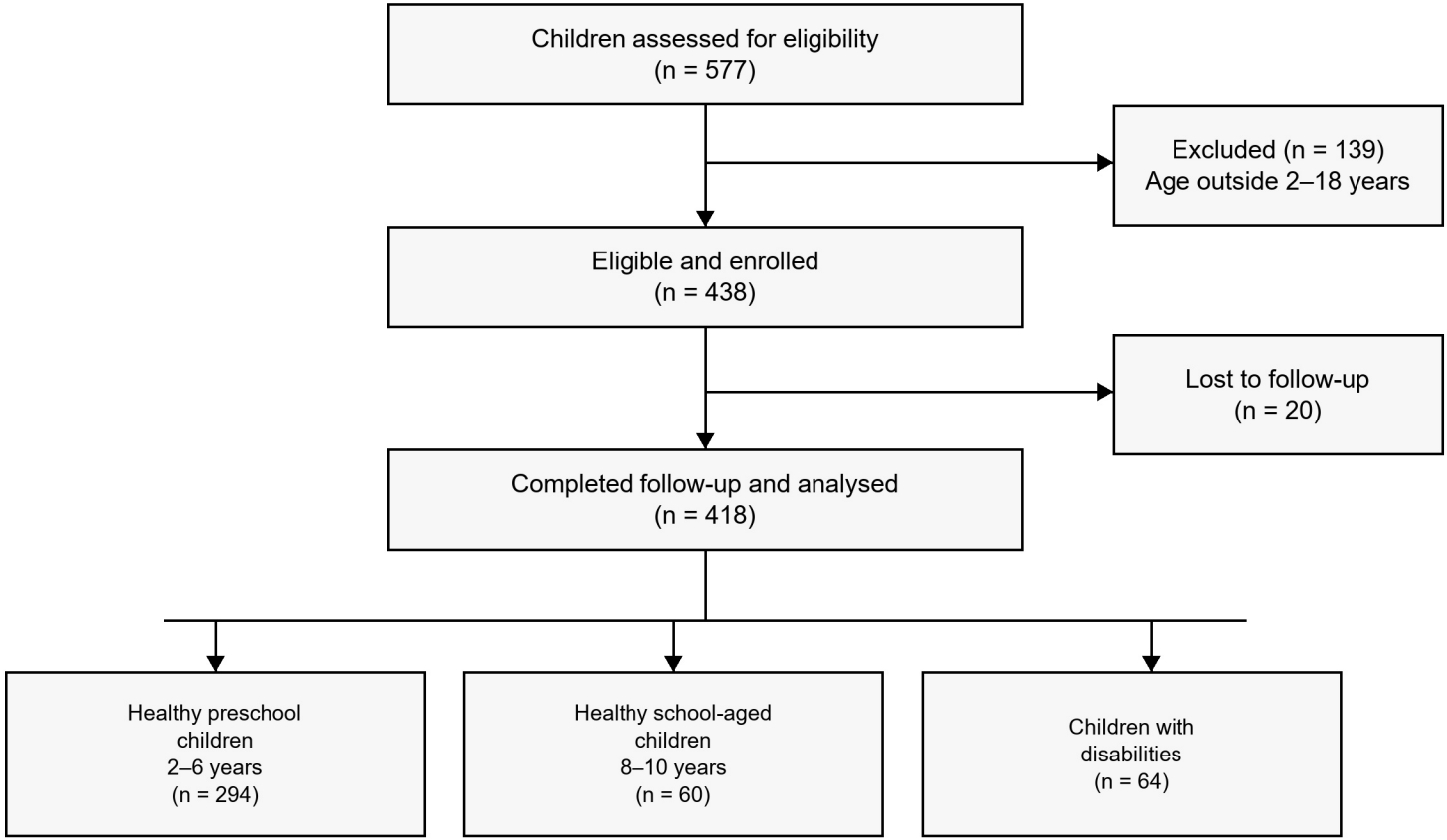
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Children assessed for eligibility
(n = 577)
Excluded (n = 139)
Age outside 2–18 years
Eligible and enrolled
(n = 438)
Lost to follow-up
(n = 20)
Completed follow-up and analysed
(n = 418)
Healthy preschool
children
2–6 years
(n = 294)
Healthy school-aged
children
8–10 years
(n = 60)
Children with
disabilities
(n = 64)

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