Changes in aspects of children's oral-health-related quality of life following dental treatment under general anaesthesia

H. K. ANDERSON, B. K. DRUMMOND & W. M. THOMSON

Department of Oral Sciences, School of Dentistry, University of Otago, Dunedin, New Zealand

Summary. *Objectives.* This study was intended to examine the treatment-associated change in aspects of oral-health-related quality of life (QoL) among children (and their families) undergoing dental rehabilitation under general anaesthesia (GA).

Methods. The parents or caregivers of a consecutive clinical sample of children receiving comprehensive dental treatment under GA at the University of Otago School of Dentistry, Dunedin, and the Christchurch Oral Health Centre, Christchurch, New Zealand, were interviewed by telephone before and after the treatment. Questions were asked relating to the impact of the condition on the child and the family. The posttreatment questionnaire also sought information related to parental satisfaction with the care provided under GA.

Results. The parents or caregivers of 95 children participated in the study: 49 had treatment completed at the University of Otago School of Dentistry; and 46 were treated at the Christchurch Oral Health Centre. The child sample comprised 55.8% males and 44.2% females with a mean age of 5.1 years. Their mean dmft was 8.2. A consistent pattern of improvement was found with each indicator used. Complaints of pain, problems with eating and sleeping, and behaviour concerns showed significant improvements, with 100% improvement for children for whom frequent pre-GA problems associated with eating, sleeping and behaviour were reported. Sixty-six parents had to arrange time away from employment on the day of the GA and almost half of those incurred a loss of income. The majority of parents reported a high degree of satisfaction with the care received.

Conclusions. Treating young children with high disease experience in a single session under GA results in immediate improvement in oral health and aspects of their QoL for both the children and their families.

Introduction

Despite the declining prevalence of dental caries in recent decades, there are still a substantial number of children with early childhood caries. Many of these children are young and have many carious lesions, which may pose a problem with behaviour management when prolonged or multiple visits for dental treatment are needed. There are numerous behavioural and therapeutic approaches to the management of early childhood caries. For many young children with extensive dental involvement, however, successful treatment in the conventional care setting is extremely difficult, and comprehensive oral rehabilitation under general anaesthesia (GA) is required in order to provide quality dental care. The advantages of GA include: providing treatment that is safe, efficient and convenient; extensive highquality treatment being provided in a single visit, with minimal discomfort to the patient; and less physical and mental stress for both the patient and dentist. Confidence in coping with dental care can be

Correspondence: Dr B. K. Drummond, Department of Oral Sciences, School of Dentistry, University of Otago, PO Box 647, Dunedin, New Zealand. E-mail: bernadette.drummond@dent.otago.ac.nz

rebuilt with a preventive programme afterwards, so as to minimize their future treatment requirements [1].

There are risks and complications associated with general anaesthetic procedures, and because of these, it has been considered to be a last resort for providing dental treatment. This is also related to cost and parental acceptability [2-4]. Retrospective reviews in Australasia have confirmed a trend of increasing numbers of children receiving treatment under GA. Because of this greater demand, waiting times have increased substantially, with many children waiting over 3 months before receiving treatment [5-7]. Many children may not verbalize feelings of chronic pain [8] as a result of their immaturity, and perhaps, the consistency of the pain over a long period. This pain may, however, be manifest in other aspects of their daily living, especially through problems with eating, sleeping, concentration and behaviour.

There is a paucity of information regarding the benefits of dental treatment under GA, with only a few studies having reported on changes in aspects of oral-health-related quality of life (QoL) following this mode of treatment. Acs et al. looked at the effect of dental rehabilitation under GA on the body weight of 51 US children with early childhood caries. Prior to dental rehabilitation, patients weighed (on average) significantly less than healthy, cariesfree children from the same low socio-economic status population, with 13.7% of the children weighing less than 80% of their ideal weight. The children appeared to have a 'catch up' growth period over the 1.5-year follow-up after treatment [9]. A study by Thomas and Primosch failed to confirm these findings, however. Their study included 50 healthy children from Florida, USA, who were treated under GA for dental caries. Children's weights were not significantly below the fiftieth percentile before treatment. Dental rehabilitation resulted in only a slight (non-significant) increase in weight relative to their peers [10]. What is not known, however, is whether both groups had similar body mass indices since the children's heights were not recorded.

A pilot study by Low *et al.* assessed the effects of extensive dental caries on aspects of QoL in 77 young Canadian children over a 5-month period. Caregivers completed a questionnaire on the day of dental treatment under GA, and were interviewed 4–8 weeks later. They found that 48% of children had complained about their teeth before treatment, 43% had problems eating certain foods, 61% had difficulty finishing meals, 35% of children did not sleep well and 5% had shown some form of negative behaviour. After treatment, improvements were noticeable in all of the indicators addressed [8]. In a study by Acs et al., the parents of 228 children (mean age = 42 months) who received comprehensive dental care under GA completed post-treatment questionnaires. Eighty-six per cent reported improvements in pain symptoms, with 69% and 41%, respectively, reporting improvements in ability to eat and sleep. Seventy-two per cent reported an improvement in their child's overall health. Children with other medical or developmental conditions were more likely to show improvements in eating and sleeping [11]. Thomas and Primosch also assessed indicators of aspects of QoL: 90% of parents reported that their child's QoL had improved following treatment, with the remaining 10% being neutral. Prior to treatment under GA, up to 60% of the children complained about their teeth, had chewing problems, limited the amount of food eaten at meals, slept poorly or were irritable [10].

A study of 103 children by Holt *et al.* at the Eastman Dental Hospital, London, UK, assessed the cost to the family. One or more adults accompanied each child. Seventy-nine adults took time off work; 29 of those incurred a loss of salary, and 34 families had had to make arrangements for the care of their other children. Almost all families (94%), however, said they would consider another GA for treatment if it was needed [12]. In 1996, Podesta and Watt completed a quality assurance review of a Community Dental Service in East Kent, UK, and reported that 93% thought GA was the best treatment for their child to solve the current problem and would consider another GA (if necessary) in the future [13].

Very few studies have examined the effect of dental caries on children's eating and sleeping patterns, and general health, and none has assessed the wider impact on the family, including cost and time issues for the parents. The aims of this study were to assess the consequences of treatment for dental caries under GA on the general health and well-being of children and their families, and to assess parental views on the quality of (and their satisfaction with) the treatment provided.

Subjects and methods

The study was carried out at the University of Otago School of Dentistry, Dunedin, and the Christchurch Oral Health Centre, Christchurch, New Zealand, two centres which provide comprehensive dental care under general anaesthetic for healthy children with severe dental caries. Ethical approval was obtained from the Otago and Canterbury ethics committees. Children requiring comprehensive dental treatment under GA because of severe caries were eligible to take part in the study. The parents or caregivers of eligible children aged between one and 8 years were invited to participate. Parents or caregivers who were unable to communicate in English, families who had no telephone access, or those who were unable to be successfully contacted before or after the child's general anaesthetic to complete the interviews were excluded from the study.

Structured questionnaires were developed for pre- and post-treatment by utilizing questions from previous studies [8,11], and modified questions from the Children's Oral Health Quality of Life project [14]. A study introduction letter was sent with the anaesthetic date information. Parents were contacted by phone during the week before the GA date to obtain verbal consent, and to complete a pre-treatment interview. Approximately 2 weeks after the child's dental treatment, a post-treatment telephone interview was completed. Questions asked during these interviews sought information on complaints of pain, problems with eating certain foods (e.g. hot, cold or sweet), inability to finish meals, and problems with sleeping and/or behaviour. Additional family aspects were investigated, such as child care for siblings, time off work and loss of income as a consequence of the needed dental care. The post-treatment questionnaire also included questions related to parents' thoughts about the overall care provided. The investigator (H.A.) conducted all of the interviews, and it is emphasized that the parents (not the children) were the informants. It was considered that it would have been an unwarranted imposition on the families concerned (and would probably have jeopardized the ethics approval for the study) to repeat the interviews for a subsample in order to compile a replicate data set, and therefore, this was not done. Demographic data collected included age at time of treatment, gender, ethnicity, community water fluoride status and socio-economic status (SES). The SES was allocated using an area-based measure, the local school's decile rating (using the New Zealand Ministry of Education's targeted funding for educational achievement indicator for schools [15]). Deciles 1-3 were classified as low SES, 4-7 as medium SES and 8-10 as high SES. Clinical data (including waiting time from time of referral) were obtained from the dental records after the treatment was completed. The data were entered onto a database using the Dental Survey Plus 2 computer program and analysed using the SPSS computer program. The McNemar Test was the principal statistical test used for the analysis of the data because 'before' and 'after' comparisons of proportions were made.

Results

Sample size

Over an 8-month period, 95 parents or caregivers of children receiving a general anaesthetic for dental treatment completed telephone questionnaires approximately one week before and 2 weeks after their child's GA. Thirty did not consent or could not be reached by telephone within the appropriate time frame before or after their child's treatment, and a number of families were not contacted because of the exclusion criteria. Forty-nine (51.6%) children had their treatment completed at the University of Otago School of Dentistry and 46 (48.4\%) at the Christchurch Oral Health Centre.

Socio-demographic and self-care data

The sample consisted of 53 males (55.8%) and 42 females (44.2%) with a mean age of 5.1 years (SD = 1.1; median = 5) and an age range of 2.6-8.9 years; only eight children (8.4%) were aged 7 years or older. Eighty children were classified by their parents as New Zealand European, 11 were Maori and four were from another ethnic background. Over half of the children (70.5%) came from communities with non-fluoridated water, and 17.9% lived in communities with low-decile schools ('low SES'); 53 (55.8%) and 25 (26.3%) were from medium and high SES communities, respectively. Approximately 25% of the children frequently used additional fluoride, such as a daily fluoride mouthwash or tablet, and 60% of parents provided help with their child's brushing of their teeth (incidentally, the use of additional fluoride or parental help with brushing did not change significantly pre- and post-treatment).

Clinical data

Prior to treatment, the mean dmft was 8.2 (SD = 3.3), with a range of 1–18. The mean dmft

Treatment item*	Total number	Mean number (± SD)**	Range	
Amalgam:				
one surface	11	1.6 ± 0.8	1-3	
two surfaces	14	1.6 ± 1.0	1-4	
three surfaces	2	2.0 ± 0.0	2-2	
Composite/anterior:				
one surface	41	2.6 ± 2.0	1-9	
two surfaces	3	1.5 ± 0.7	1-2	
three surfaces	2	1.0 ± 0.0	1-1	
Composite/posterior:				
one surface	70	2.3 ± 1.6	1-6	
two surfaces	24	1.4 ± 0.6	1-3	
three surfaces	1	1.0 ± 0.0	1-1	
Global index of correction (anterior):				
one surface	65	2.5 ± 1.5	1-6	
two surfaces	4	1.3 ± 0.6	1-2	
three surfaces	1	1.0 ± 0.0	1-1	
Global index of correction (posterior):				
one surface	89	3.0 ± 2.2	1-10	
two surfaces	92	2.6 ± 1.5	1–7	
three surfaces	2	1.0 ± 0.0	1-1	
Pulpotomy	78	1.7 ± 0.8	1-4	
Stainless steel crown	130	2.5 ± 1.1	1-5	
Extraction	195	3.0 ± 2.1	1-12	
Fissure sealant	74	2.6 ± 1.4	1-6	

Table 1. Treatment items provided under general anaesthetic.

*In addition, 84 children had radiographs taken, 33 received prophylaxis and 39 received fluoride treatment.

**Among those who received this treatment.

was 2.0 (SD = 1.3), with a range of 1-4. Six children required permanent molar restorations. The range of treatments provided under GA is presented in Table 1.

The waiting time from referral differed between the two centres. The mean time at the University of Otago School of Dentistry was 7.9 months (SD = 2.0), with a range of 1–12 months, and that for the Christchurch Oral Health Centre was 5.5 months (SD = 2.0), with a range of 3–12 months.

Aspects of oral-health-related quality of life

Data on the frequency of reported child impacts are presented in Table 2. All of the children showed a significant improvement regarding complaints of pain, eating, sleeping trouble or behaviour concerns. Only one child (who had had minimal or no complaints before treatment) had some pain and sensitivity to temperature after having dental treatment completed. There was an overall decrease in the number of children who snacked frequently throughout the day.

Only two families had required time off work to care for their child 'often', but 42 parents had 'sometimes' taken time off work to care for the child and attend dental appointments. Of these 44 families, 21 (47.7%) had incurred a loss of income before their child's GA. On the day of the GA for dental treatment, 66 (69.5%) parents or caregivers arranged time away from work, and 47% of those lost income as a result. Fifty-one (53.7%) had to arrange alternative or extra child care for siblings of the child having treatment. Forty-two families (44.2%) had to arrange transport or travel some distance to the centre providing the treatment.

Data on the impact of the child's oral health on the family (before and after dental treatment) are shown in Table 3. Only four items were addressed directly post-treatment, and those items indicate an overall improvement in aspects of the family's QoL. A high percentage of parents or caregivers felt guilty or upset about their child's dental status and the need for a GA, and were worried about the condition of their child's teeth in the future. The majority of parents or caregivers (72.6%) reported a perceived improvement in their child's overall health and QoL, with the other 27.4% being neutral, implying that no change had occurred. No child had worsened. Seventy-one parents (74.7%) thought that their child was generally a lot 'happier'.

	Number of participants who reported impact 'all the time' or 'often' (%)					
Questionnaire item	All participants			Among participants who reported impact 'all the time' or 'often' at baseline		
	Pre-treatment	Post-treatment	P-value	Pre-treatment	Post-treatment	P-value
Complains about teeth/gums	18 (18.9%)	1 (1.1%)	< 0.001	18 (18.9%)	0 (0.0%)	_
Has pain/sensitivity with hot/cold	17 (17.9%)	1 (1.1%)	< 0.001	17 (17.9%)	0 (0.0%)	-
Has pain/sensitivity with sweets	8 (8.4%)	0 (0.0%)	_	8 (8.4%)	0 (0.0%)	-
Gets food stuck between teeth	23 (24.2%)	4 (4.2%)	< 0.001	23 (24.2%)	2 (8.7%)	< 0.001
Is unable to finish meals	14 (14.7%)	0 (0.0%)	_	14 (14.7%)	0 (0.0%)	-
'Grazing' habit	65 (68.4%)	41 (43.2%)	< 0.001	65 (68.5%)	38 (58.5%)	< 0.001
Has sleeping problems	12 (12.6%)	0 (0.0%)	_	12 (12.6%)	0 (0.0%)	_
Has behaviour problems	9 (9.5%)	0 (0.0%)	-	9 (9.5%)	0 (0.0%)	_

Table 2. Frequency of child impacts pre- and post-treatment.

*Percentages in this column were calculated using the number in the pre-treatment column as the denominator.

Table 3. Frequency of family impacts pre- and post-treatment.

Questionnaire item	Number of participants who reported impact 'all the time' or 'often' (%)					
	All participants			Among participants who reported impact 'all the time' or 'often' at baseline		
	Pre-treatment	Post-treatment	P-value	Pre-treatment	Post-treatment	P-value
Child required extra care/attention	19 (20.0%)	1 (1.1%)	< 0.001	19 (20.0%)	0 (0.0%)	_
Required child care for siblings	4 (4.2%)	0 (0.0%)	-	4 (4.2%)	0 (0.0%)	-
Changed food/diet*	14 (14.7%)			14 (14.7%)		
Had sleep disrupted	19 (20.0%)	0 (0.0%)	_	19 (20.0%)	0 (0.0%)	-
Had family activities disrupted	4 (4.2%)	0 (0.0%)	-	4 (4.2%)	0 (0.0%)	-
Taken time off work*	2 (2.1%)			2 (2.1%)		
Lost income*	8 (8.4%)			8 (8.4%)		
Had a travel cost*	17 (17.9%)			17 (17.9%)		
Felt guilty/upset*	47 (49.5%)			47 (49.5%)		
Worried about child's future teeth*	61 (64.2%)			61 (64.2%)		

*Not asked at follow-up.

Assessment of the service

The majority of families reported a high degree of satisfaction (Table 4), and indicated that the experience was a positive one for them and their child. Only one parent suggested that they would be unwilling for their child to undergo another GA for dental care.

Discussion

Treatment of dental caries under GA for young children allows oral rehabilitation to be completed in a single session. These findings show that, in improving the oral health of these children in this way, the child's QoL appears to improve. This is the first Australasian study to assess how dental caries and its treatment under GA affects either the child's oral health or its impact on the family. The findings indicate a consistent pattern of improvement in aspects of oral-health-related QoL, regardless of the indicator used.

It is appropriate to briefly consider the generalizability of the study findings, considering that 30 families in this consecutive clinical sample did not consent to take part. This is the nature of the group under study. Children from deprived families are over-represented among those who undergo dental procedures under GA, and achieving participation in research by parents from such stressed households can be difficult. Accordingly, care should be exercised in interpreting and generalizing from these findings.

Aspects of quality of life

The baseline proportion of children in this study indicating any concerns or problems with their teeth

	Number of respondents (%)		
Questionnaire item	Yes	No	
Received enough information before treatment	90 (94.7%)	5 (5.3%)	
Knew where and how to access help after treatment	94 (98.9%)	1 (1.1%)	
Regarded the experience to be positive	76 (80.0%)	19 (20.0%)	
Had any concerns about the care received	8 (8.4%)	87 (91.6%)	
Has had follow-up care arranged	32 (33.7%)	63 (66.3%)	
Would consider a general anaesthesia for treatment again	94 (98.9%)	1 (1.1%)	

Table 4. Parental satisfaction with the care provided under general anaesthesia.

and mouth appears lower than a previous estimate [8]. The authors chose to dichotomize responses into 'all the time'/'often' versus 'sometimes'/'never', however, thus enabling analysis of items that have a large impact on the child and family, and this may have affected the comparison. Although the children in this study had severe caries (most requiring at least six restorations), it is somewhat surprising that fewer than 20% of their parents indicated that they had frequently complained about their mouth, had pain or sensitivity when eating, were unable to finish meals, or had sleeping or behaviour problems. Up to 45% noted 'occasional' pain or problems, however. All of the children with frequent pain before treatment showed dramatic improvements after treatment. The scale of improvement observed here (100% of children) is greater than that reported in previous studies. The greatest improvement in those studies (from 86% to 97%) was in parents' reports of children's complaints of mouth pain. This was followed by improvements in eating and sleeping [8,10,11]. There was an overall reduction in the number of children who had frequent snacks or 'grazed' throughout the day. This may be explained by their greater ability to finish eating their regular meals (thus being less hungry in between meal times), or greater parental awareness of the dental problems associated with 'grazing' (because of their recent dental experiences) and, therefore, not allowing their child to eat on demand.

This study also assessed the parents' perceptions of their child's dental condition and oral-health-related QoL. Parents frequently commented at the post-GA interview on how their child had changed overall, especially with regard to improvements in behaviour, sleeping and eating. It is possible that some parents may have underestimated the full extent of the problems during the pre-treatment interview by thinking that it was just their child's 'normal' behaviour. Interestingly, some parents of school-age children also suggested that their child's concentration and schoolwork had improved, with teachers commenting on an improvement in the classroom setting. All of the four family impact items assessed directly before and after the dental treatment under GA showed an improvement. Having sleep disrupted frequently because a child awakes with symptoms of dental pain must (over time) become a burden on the family. Having to prepare different food, or having a child who refuses to eat because her or his teeth 'hurt' is also disruptive to a family's routine. These findings indicate that providing dental rehabilitation under GA has benefits for the family as well.

A child who requires dental treatment relies on an adult to accompany her or him to a dental appointment. Many parents find it difficult to arrange time off work. They may often incur a loss of income, or have to use holiday leave (thus also indirectly impacting on the family). The proportions of parents in this study who had to arrange time away from work (69.5%) and lost income (47%) are comparable to estimates by Holt *et al.*, who reported rates of 76.7% and 36.7%, respectively [12]. The effect of a child with dental problems clearly extends beyond that individual and impacts on the wider family unit.

Some children had received a previous GA for treatment of acute episodes of pain, usually involving extraction of symptomatic teeth only. Other children had had treatment attempted in the dental clinic, including the placement of temporary restorations to relieve or prevent dental symptoms.

The dental treatment and general anaesthesia service

All but one responding parent suggested that they would be happy to consider another GA for their child's dental treatment in the future, if it was needed. This is similar to other studies [12,13]. Very few children in this study had received any form of pharmacological management or conscious sedation to assist treatment before being referred to have treatment under GA. Podesta and Watt reported that 70% of children in their study had not been offered any alternative treatment options [13]. It appears that sedation procedures may be under-utilized (or considered a less acceptable or useful means of behaviour management) by general dental practitioners. Young children who have multiple carious lesions, however, may not be able to tolerate several sedation appointments, leaving comprehensive rehabilitation under GA as the only realistic option.

Follow-up preventive care

Only 34% of parents reported that follow-up care had been (or was being) arranged for their child. All had received a courtesy call the day after the GA to confirm the absence of problems or symptoms, but very few were aware of when there would be any future appointments. The majority of children continue their dental care with the School Dental Service (a government-funded service for pre-school and school-aged children until the age of 12-13 years). The data on parental help with brushing teeth and the use of supplemental fluorides (especially in non-fluoridated communities) were somewhat disappointing: only 60% of parents reported frequently assisting with brushing (and 25% using topical fluoride). It may be that there are family or social constraints which preclude parental involvement with brushing of teeth or using fluoride mouthwash. Many of the parents would have received advice regarding preventive care during the initial examination appointment, as well as at any other visits before the GA. In this respect, these findings mirror those of other studies [16-18], and because of this, it is difficult to determine the long-term prognosis for these children's oral health.

The range of dental treatments provided for these children differed among clinicians and facilities/ institutions providing the GA treatment, and this study does not address the issue of what range of care is appropriate under GA. Future investigations need to assess (preferably using a validated scale approach) the costs, benefits and quality of different treatments under GA for the outcome of long-term improvement in QoL. These findings show a high degree of satisfaction with the outcomes of dental treatment under GA, but only limited changes in preventive behaviours. Future studies should also investigate the reasons for the latter.

Conclusions

Treating children with a high disease experience in a single session under GA results in an immediate improvement in oral health and aspects of QoL for both the children and their families, the attendant GA risks notwithstanding. Providing comprehensive dental treatment for young children under GA appears to be an acceptable approach for the majority of parents.

Acknowledgements

The authors thank Ms Leigh Carraher and Mrs Adrienne Hay for their assistance in administering the provision of study information to the families.

This project was submitted in partial fulfilment of the requirements for the degree of Master of Dental Surgery at the Department of Oral Sciences, University of Otago School of Dentistry, Dunedin, New Zealand.

Résumé. *Objectifs.* Examiner les changements, associés au traitement, des aspects de qualité de vie liés à la santé, parmi les enfants (et leurs familles) qui bénéficient d'une réhabilitation dentaire sous anesthésie générale (AG).

Echantillon et méthodes. Les parents ou personnes en charge d'enfants recevant des traitements dentaires sous AG à la Faculté Dentaire de l'Université d'Otago et au Centre de Santé Dentaire de Christchurch, ont été questionnés au téléphone avant et après traitement. Les questions portaient sur l'impact sur l'état général de l'enfant et sur la famille. Le questionnaire post-traitement a également recherché des informations sur la satisfaction parentale par rapport aux soins effectués sous AG.

Résultats. Les parents/personnes en charge de 95 enfants ont participé à l'étude, 49 ayant eu un traitement effectué à la Faculté Dentaire de l'Université d'Otago et 46 au Centre de Santé Dentaire de Christchurch. L'échantillon d'enfants était composé de 55,8% de garçons et 44,2% de filles, d'âge moyen 5,1 ans. L'indice caod moyen était de 8,2. Un pattern net d'amélioration a été rencontré concernant chaque indicateur utilisé. Les problèmes de douleur, d'alimentation, de sommeil et de comportement ont montré une amélioration significative, dont 100% pour les enfants chez lesquels les problèmes préAG étaient associés à l'alimentation, au sommeil et au comportement. Soixante-six parents ont dû s'absenter de leur travail le jour de l'AG et près de la moitié d'entre eux ont subi une baisse de revenu. La majorité des parents a fait état d'un haut degré de satisfaction concernant les soins reçus.

Conclusions. Traiter de jeunes enfants polycariés en une seule séance d'AG provoque une amélioration immédiate de la santé buccale de la qualité de vie des enfants et de leur famille.

Zusammenfassung. Ziele. Ziel dieser Studie war die Untersuchung behandlungsassoziierter Veränderungen der mundgesundheitsbezogenen Lebensqualität bei Kindern (und deren Familien), bei welchen eine zahnmedizinische Versorgung in Narkose erfolgte. Stichprobe und Methode. Eltern/Sorgeberechtigte einer konsekutiven Stichprobe von Kindern, welche in der Universität von Otago oder dem Christchurch Gesundheitszentrum in Narkose umfassend zahnärztlich behandelt wurden, wurden telephonisch vor und nach dem Behandlungstermin befragt. Es wurden Fragen zur Bedeutung des Zustandes für das Kind und die Familie gestellt. Nach der Behandlung wurden weiterhin Fragen zur Zufriedenheit der Eltern mit der zahnärztlichen Versorgung in Narkose gestellt. Ergebnisse. Eltern/Sorgeberechtigte von 95 Kindern nahmen an der Untersuchung teil; 49 wurden in der Universitätszahnklinik Otago behandelt, 46 im Christchurch Gesundheitszentrum. 55.8% der Kinder waren Jungen, 44.2% Mädchen, das mittlere Alter betrug 5.1 Jahre. Der dmft-Wert war im Mittel 8.2. Ein durchgängiges Muster von Verbesserung bei jedem erfragten Parameter wurde festgestellt. Zahnschmerzen wurden ebenso besser wie Probleme mit dem Essen, Schlafen sowie dem Verhalten. Sechsundsechzig der Eltern mussten sich am Tag der Behandlung in Narkose beim Arbeitgeber frei nehmen, fast die Hälfte aus dieser Gruppe hat dadurch Lohnkürzungen hinnehmen müssen. Eine Mehrheit der Eltern gab ein hohes Maß an Zufriedenheit mit der erhaltenen Behandlung an.

Schlussfolgungen. Die Behandlung von Kleinkindern mit hohem Maß an Karieserfahrung in einer Sitzung unter Vollnarkose führt zu einer unmittelbaren Verbesserung der Mundgesundheit Aspekten der Lebensqualität für die Kinder und deren Familien.

Resumen. *Objetivos.* Examinar el cambio asociado al tratamiento en aspectos de la salud bucal relacionados con la calidad de vida entre niños (y sus familias) que han sido sometidos a rehabilitación dental bajo anestesia general (AG).

Muestra y métodos. Los padres y los cuidadores de una muestra clínica consecutiva de niños receptores de tratamiento dental completo bajo AG, en la facultad de Odontología de Otago y en el centro de salud bucal de Christchurch, fueron interrogados por teléfono antes y después del tratamiento. Las preguntas fueron realizadas en relación con el impacto de la condición en el niño y la familia. El cuestionario post-tratamiento también buscaba información relacionada con la satisfacción de los padres con el cuidado provisto bajo AG.

Resultados. Los padres/cuidadores de 95 niños participaron en el estudio; 49 habían completado el tratamiento en la facultad de Odontología de la Universidad de Otago y 46 se trataron en el centro de salud bucal de Christchurch. La muestra de niños comprendía 55,8% de varones y 44,2% niñas, con una media de edad de 5,1 años. Su caod fue de 8,2. Se encontró un patrón consistente de mejora, con cada indicador usado. Las quejas de dolor, problemas con el comer y dormir y con el comportamiento mostraron mejoras significativas, con un 100% de mejora en niños para los que se habían señalado problemas de pre-AG asociados con el comer, dormir y el comportamiento. Sesenta y seis padres habían reservado tiempo de su trabajo el día de la AG y casi la mitad de ellos incurrieron en una pérdida de ingresos. La mayoría de los padres indicaron un alto grado de satisfacción con el cuidado recibido.

Conclusiones. Tratar a los niños pequeños con extensa presencia de la enfermedad en una sola sesión bajo AG produce una mejora inmediata en su salud bucal y en aspectos de la calidad de vida de los niños y sus familias.

References

- 1 Legault J, Diner M, Auger R. Dental treatment of children in a general anaesthesia clinic: review of 300 cases. *Journal* of the Canadian Dental Association 1972; 6: 221–224.
- 2 Fields H, Machen J, Murphy M. Acceptability of various behavior management techniques relative to types of dental treatment. *Pediatric Dentistry* 1984; **6**: 199–203.
- 3 Lawrence S, Tigue D, Wilson S *et al.* Parental attitudes toward behavior management techniques used in pediatric dentistry. *Pediatric Dentistry* 1991; **13**: 151–155.
- 4 Enger D, Mourino A. A survey of 200 pediatric dental general anesthesia cases. *Journal of Dentistry for Children* 1985; **52**: 36–41.
- 5 Alcaino E, Kilpatrick N, Kingsford Smith E. Utilization of day stay general anaesthesia for the provision of dental treatment to children in New South Wales, Australia. *International Journal of Paediatric Dentistry* 2000; 10: 206–212.
- 6 Thomson WM. Day-stay treatment for dental caries at a New

Zealand hospital dental unit: a 5-year retrospective audit. *New Zealand Dental Journal* 1994; **90**: 139–142.

- 7 Davidson LE, Drummond BK, Williams SM et al. Comprehensive dental care under general anaesthesia from 1997–1999 for children under 6 years. *New Zealand Dental Journal* 2002; **98**: 75–78.
- Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. *Pediatric Dentistry* 1999; 21: 325–326.
- 9 Acs G, Shulman R, Ng M et al. The effect of dental rehabilitation on the body weight of children with early childhood caries. *Pediatric Dentistry* 1999; 21: 109–113.
- 10 Thomas C, Primosch RE. Changes in incremental weight and well-being of children with rampant caries following complete dental rehabilitation. *Pediatric Dentistry* 2002; 24: 109–113.
- 11 Acs G, Pretzer S, Foley M *et al.* Perceived outcomes and parental satisfaction following dental rehabilitation under general anesthesia. *Pediatric Dentistry* 2001; **23**: 419–423.
- 12 Holt R, Chidiac R, Rule D. Dental treatment for children under general anaesthesia in day care facilities at a London dental hospital. *British Dental Journal* 1991; **170**: 262–266.

- 13 Podesta JR, Watt RG. A quality assurance review of the patient referral process and user satisfaction of outpatient general anaesthesia services for dental treatment. *Community Dental Health* 1996; **13**: 228–231.
- 14 University of Toronto Faculty of Dentistry. *Children's Oral Health Quality of Life Website*. [WWW document.] URL http://www.cdhsru-uoft.ca/cohqol/
- 15 Ministry of Education Data Management and Analysis Section. Ministry of Education Socio-economic Indicator for Schools. Wellington: Ministry of Education, 2003.
- 16 Almeida A, Roseman M, Sheff M *et al.* Future caries susceptibility in children with early childhood caries following treatment under general anesthesia. *Pediatric Dentistry* 2000; 22: 302–306.
- 17 Sheehy E, Hirayama K, Tsamtsouris A. A survey of parents whose children had full-mouth rehabilitation under general anesthesia regarding subsequent preventive dental care. *Pediatric Dentistry* 1994; 16: 362–364.
- 18 Worthen T, Mueller W. Implications of parental compliance on decision making in care provided using general anesthesia in a low-income population. *Journal of Dentistry for Children* 2000; 67: 197–199.

Copyright of International Journal of Paediatric Dentistry is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.