

## Acceptability of the Hall Technique to parents and children

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### ABSTRACT

**Objective:** To investigate the acceptability of stainless steel crowns placed by dental therapists on children's primary molars using the Hall Technique.

**Design:** Mixed methods approach, using qualitative inductive analysis and quantitative analysis.

**Setting:** Hawke's Bay Community Oral Health Service

**Methods:** One focus group was conducted and ten thirty-minute phone interviews were undertaken with parents of children who had previously had a stainless steel crown placed using the Hall Technique (over the period 1 December 2011 to 31 May 2012). An inductive approach was used to analyse the qualitative research data, and the information was arranged into several categories based on the key themes which arose. Children treated with the Hall Technique were asked immediately after treatment whether they had enjoyed their visit to the clinic that day.

**Results:** Common themes were found with regard to appearance, pain, the procedure, and general opinions on acceptability. Nearly all (90%) of the children responded positively about their visit to the clinic.

**Conclusion:** There was a high degree of acceptance among both parents and children for stainless steel crown placement using the Hall Technique in this group.

### INTRODUCTION

Dental caries is the most common chronic condition afflicting New Zealanders, and it is the most common chronic childhood disease (Public Health Advisory Committee, 2003). Māori or Pacific Island children and those of low socioeconomic status have greater dental caries experience (Ministry of Health, 2010). Child oral health inequalities persist in New Zealand despite recent years' considerable policy focus on reducing them.

Traditional treatment of caries has been by surgical removal of the infected dental tissues, followed by restoration with a suitable filling material. This conventional dental treatment is invasive, often involving the destruction of considerable amounts of sound tooth for access to the carious lesion, particularly in interproximal sites (Vila Verde et al, 2009). Moreover, conventional restorations have a limited lifetime, leading to a cycle of repeated restoration (Elderton, 1993), which in turn means inefficient use of limited oral health services resources, more pulp disease and (ultimately)

early loss of teeth. Failure of restorations in primary teeth is more common in younger age groups, perhaps because, in children, the anatomy of primary teeth, small mouths and age-appropriate limited cooperation can make the placement of restorations challenging (Chadwick and Evans, 2007).

Preformed stainless steel crowns (SSCs) are recommended by the British Society for Paediatric Dentistry as the treatment of choice for primary molar teeth with caries involving two or more surfaces. The American Academy of Pediatric Dentistry recommends their use for "extensive decay, large lesions, or multiple-surface lesions" (Kindelan et al, 2008)<sup>1</sup>. They have been shown to be more durable in children than any other restorative material (Attari et al, 2006; Innes et al, 2007), and yet, despite the guidelines and evidence, SSCs have not been widely used except by specialists in paediatric dentistry. Recently, there has been renewed interest in the use of SSCs following the introduction of the "Hall Technique", a novel clinical approach to treating caries. The Hall Technique is a simplified method involving cementing SSCs on carious primary molar teeth with no local anaesthesia, caries removal or tooth preparation (Innes et al, 2007). In a study undertaken in Scottish general dental practices, SSCs placed with the Hall Technique demonstrated better longevity and more favourable outcomes (less pain and sepsis) over a five-year period than conventional restorations (Innes et al, 2011). Moreover, there was less discomfort than with the conventional restorations, and the patient, caregiver, and dentist perceptions of the Hall Technique were positive (Innes et al, 2007), with most of those preferring SSCs placed with the Hall Technique to conventional restorations.

It has been thought that the limited use of SSCs by dental practitioners is due to (1) the patient and parent having negative opinions of SSCs, and (2) the difficulty of placing them in children (Roshan et al, 2003). A recent study exploring Sheffield dental students' experiences using the Hall Technique found it to be an acceptable clinical procedure, with mostly favourable treatment experiences and patient feedback. An unexpected finding was the social judgement made by some participants, who stated that SSCs may be more acceptable to families of lower socio-economic status (Gilchrist et al 2013). It was also found that most of the children and their families attending a Sheffield dental hospital viewed the crowns' appearance favourably. Some of the feedback did suggest that specific aspects of treatment had been painful on occasion (Bell et al, 2010).

Despite the positive findings of the Scottish and Sheffield studies, further questions remain, not least that of whether their findings can be translated to New Zealand, with its unique population and its very different system of primary dental care for children. Accordingly, the aim of this study was to assess the acceptability of stainless steel crowns placed with the Hall Technique by New Zealand dental

<sup>1</sup> American Association of Pediatric Dentistry (2008). Clinical guideline on pediatric restorative dentistry [http://www.aapd.org/media/Policies\\_Guidelines/G\\_Restorative.pdf](http://www.aapd.org/media/Policies_Guidelines/G_Restorative.pdf)

therapists, by investigating the perceptions of parents/caregivers and children.

## METHODS

This project involved an initial focus group discussion (using a participatory approach), followed by individual in-depth interviews. The fieldwork was carried out over approximately four months with a group of parents/caregivers of 6- to 9-year old children who had stainless steel crowns placed using the Hall Technique in Hawkes Bay community clinics. This was undertaken as part of a study (known as FEAST-HB) investigating the feasibility of the technique for the New Zealand primary oral health care setting. Consent for participation in the focus group and phone interviews (including recording) was obtained from parents before commencement, and ethical approval was obtained from the Central Regional Ethics Committee.

One focus group<sup>2</sup> was undertaken with five parents whose children had been treated with the Hall Technique. It was conducted in a local school and moderated by a Hawkes Bay Māori facilitator. This identified the broad range of parental opinions and comments about SSCs placed with the Hall Technique, with the findings used to construct a topic guide for the subsequent telephone interviews. Following this, ten in-depth, thirty-minute phone interviews were conducted with ten parents/caregivers (selected at random) whose children had been treated with the Hall Technique. All discussions were audio-recorded and transcribed verbatim.

The focus group and interviews were conducted using open-ended questions structured to capture different aspects of parental satisfaction, attitudes, and concerns about the procedure and their child's dental care. Using inductive reasoning<sup>3</sup> (Thomas 2006), key issues that arose in the focus group and first interview were noted, and these were used to make inductive inferences<sup>4</sup>

(formulating grounded or inductive hypotheses). This enabled additional questions to be developed to gather more in-depth information, and this process continued following each interview, until a point was reached where no new information emerged, indicating information saturation.

An inductive approach was used to analyse parent perceptions of different aspects of the use of the Hall Technique. Key themes were identified and categorised as they emerged from the data and, after analysis, tentative theoretical explanations were generated from the findings.

To improve validity through triangulation, three researchers were involved in the analysis and interpretation of the data. SED and SKM read and re-read the parents' responses, and separately noted the key ideas which arose; they formulated the major categories before coming together to discuss the findings and decide on mutually agreeable categories. A score out of 10 was assigned to each category or theme in order to indicate the number of people who expressed that opinion during the interviews. The focus group responses were taken into account when categorising the data into themes, but that information was not included in the score out of ten.

Through further scrutiny of the transcripts, SED and SKM checked that no categories had been missed or mischaracterised. To enhance validity, this was then compared with independent parallel coding from the third researcher (NPI), who had not been involved in examining the data prior to this point.

All 98 children who had SSCs placed as part of the FEAST-HB Trial were asked at the end of treatment "Did you enjoy your visit to the clinic today?", with response options of "Yes", "No" and "Do not know". Information was gathered on each child's sex, age and ethnicity. An area-based deprivation measure (Salmond and Crampton, 2002) was used to allocate each participant to a deprivation decile score, based on the residential address. Areas with decile scores 1 to 3 were classified as "low deprivation", and those with scores 8 to 10 were classified as "high deprivation".

## RESULTS

Of the 10 families that were contacted, 3 reported being European, 3 Māori, 3 Māori/European, and 1 reported being in the 'other'

<sup>2</sup> A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product/service.

<sup>3</sup> Inductive reasoning is reasoning from detailed facts to general principles

<sup>4</sup> Inductive inference is the process of hypothesising a general rule from examples

**Table 1.** Themes (and examples) of parent interviews

Themes	Examples
Pain with SSC Hall Technique	"Funny going on but was Okay" "He said there was no pain" "Fiddling around trying to get the right size"
Appearance	"Not bothered about the silver tooth" "Almost looks like a grille" "Silver everywhere would look terrible"
General opinion to technique	"Thinks it is neat" "...preferred the crown, big time..." "All think she is pretty cool since she has got a silver crown in her mouth"
Attitudes to conventional treatment and local anaesthetic	"She didn't want another injection" "fillings just fall out" "Fairly stressed" "Doesn't like the feeling of needles" "No, he has always been good"
Knowledge	Decay "Eating sugary foods" "Poor hygiene" Saving primary teeth "Think baby teeth are important"
Having this technique again	"New way of dealing with cavities" "I would ... seems so much easier ... it would be a good option" "Yes, definitely"
Problems with Hall Technique	Separators "Just a weird feeling...we thought he might try and pick them out" Occlusion "It might be like a little raised"

**Table 2.** Parents' themes on the Hall Technique and the number of responses to the subcategories

Themes	Sub-category	No of each response	No for subgroups of each response
Pain with SSC Hall Technique	<i>During treatment</i>	1. No discomfort (6) 2. Discomfort (4)	a. With trying on crowns (1) b. With crown not fitting (3)
	<i>After treatment</i>	1. No discomfort (8) 2. Discomfort (2)	a. Sensitivity to hot/cold (1) b. High occlusion (1)
Appearance	<i>Child</i>	1. Positive (8) 2. Neutral (2)	
	<i>Adult</i>	1. Positive (8) 2. Negative (2)	
General opinion of technique		1. Positive (8) 2. Negative (2)	a. General opinion (6) b. Opinion on procedure (1) c. Crown vs. filling (1) a. Procedure (1) b. Worry about peer response (1)
	Conventional treatment and local anaesthetic	1. Positive (4) 2. Negative (6)	a. Anxious with local anaesthetic (6) b. Anxious with drilling (1)
Knowledge	<i>Decay</i>	1. Knowledge (5) 2. No knowledge (5)	a. Causes (4) b. Process (2)
	<i>Preserving primary teeth</i>	1. Knowledge (5) 2. No Knowledge (5)	a. Decay spread to other teeth (3) b. Promote good habits (1) c. To prevent stress (1)
Having Hall Technique again		1. Agree (10) 2. Disagree (0)	a. Would recommend procedure (10)
Problems with Hall Technique	<i>Concerns</i>	1. No concerns (5) 2. Concerns (5)	a. Longevity (2) b. Sizing (1) c. Metal (1) d. Effect of crown on opposing teeth (1) e. Procedure (1)
	<i>Separators</i>	1. Positive (4) 2. Negative (6)	

category (North American). Three fathers and 7 mothers were interviewed. Participants who took part came from families residing in medium- to high-deprivation areas, but there was one family from the least deprived area. The age range of the children whose parents were interviewed was 6 to 7 years old.

Nearly all children (87 out of 97; 90%) treated with the Hall Technique responded positively to the question about having "enjoyed their visit to the clinic", with only 7 (7%) stating that they did not, and even fewer (3; 3%) stating that they did not know whether they had.

Seven ways of characterising how parents found the Hall Technique emerged from the interviews of parents' responses

after triangulation. The characterisations and example quotations from each are outlined in Table 1. The parent characterisations and number of responses within the sub-categories are shown in Table 2.

A common theme of "Pain" or "No pain" was identified from the parents' responses. Most parents reported that children were pain-free during the procedure, although some described their child experiencing some discomfort while the clinician was trying on different crowns to determine the correct size. Once the crown was cemented, most children had no symptoms of pain, with the only complaints being of the crown feeling a little "high" in the occlusion, and persisting sensitivity to hot and cold food and drink.

The metal crown's appearance was a major theme that emerged. A number of parents believed the children and their peers to be accepting of the metal appearance, and many children had referred to their SSC as a "transformer tooth", "Viking tooth" or "tiara tooth", for example. However, a number of parents expressed concern that their children would be teased or judged by their peers because of how the crown looked. Although most parents thought that the silver colour of the SSC did not bother their child or themselves, a few expressed concern about their adult peers' attitudes to its appearance, with fears expressed about being viewed as parents who neglected their children's teeth or diet.

"Attitudes" to past treatment or the conventional dental treatment were also seen as important, with more than half of the parents reporting that their children had had bad past experiences with dental treatment, and many reporting that children had lost fillings. Examples of this were "... he was scared and didn't like it (drilling)", and "it's about time that someone came up with something else instead of fillings that keep coming out". Six parents reported that their children were anxious about local anaesthetic injections, although four of the parents reported that their child was not concerned before treatment; for example, "he is not anxious...he has had good experiences in the past", and "check-ups are fine...it's just when he knows there is drilling or needles going in {that there is a problem}...he hasn't got a real fear".

Generally, opinions of the Hall Technique were very positive; for example, "you don't have to go through all the injections... they're good to go within minutes" and "Thinks it is neat" "... preferred the crown, big time...". Nearly all of the parents (n=8) were pleased with the approach.

Parents' knowledge of dental caries and importance of the primary teeth was generally poor, with only half (n=5) demonstrating some understanding of the disease and half (n=5) of the group believing that saving the primary teeth was important.

The use of separating rings (used to create mesio-distal space for the crown to be placed) appeared to be a minor problem for parents of more than half of the children (n=6), with parents commenting "they wanted to pull them out..., ...they complained about them on the day but not after that...". There were also some concerns raised by half of the parents about longevity and the crown's size.

Discussions on the theme of "having the Hall Technique again" showed that all parents felt that they would consider the approach again for their child. However, some raised concerns about the procedure, crown size, the metals used in the crown and its longevity (for example, "it will stay there for the life of the tooth... is that right?").

## DISCUSSION

This study explored the use of the Hall Technique, a relatively new method for restoring primary molar teeth, in children living in the Hawke's Bay region of New Zealand. The outcome of both quantitative evaluation from the child and qualitative evaluation from the parent reinforced previous findings from the UK of the Hall Technique's high acceptability to parents and children (Innes et al, 2011; Bell et al, 2010). This study is the first to investigate crown placement with dental therapists being the treatment planners and treating clinicians.

The acceptability of the Hall Technique to parents and patients has been previously documented, with a split-mouth randomised control trial in Scotland showing preference for use of the Hall Technique over standard restorations placed by general dental practitioners (Innes et al, 2011), and a Sheffield study showing that SSCs (whether placed conventionally or with the Hall Technique) were viewed favourably by children and their parents (Bell et al, 2010). In the latter study, a mixture of dental students, dentists and therapists placed the SSCs, but only 18 (29%) of the 62 were Hall Technique crowns. In that study, 97% of parents thought the latter method was acceptable, and more than half of the children (56%) responded positively to their "silver tooth". This is in line with the degree of acceptance found in the current study, with New Zealand dental therapists using the technique.

The value of getting children to express their opinions about treatment experiences is becoming increasingly important in dentistry (Marshman and Hall, 2008). There has been wider recognition that, since it is the child who receives the treatment and lives with the consequences, his/her opinions are important and credible (Mouradian, 1999). However, it is only recently that dentistry has begun to seek such information from children. In speculating about why children who had the Hall Technique enjoyed their visit to the clinic, we might consider the clinical factors that might contribute to this: no injection of local anaesthetic; no high- or slow-speed handpieces being used; and the relative brevity of the procedure (Innes, 2007). All of the children in this study had previously received dental care and knew what to expect in the dental clinic setting. There are other factors that may have contributed to the overall high positive response to their visit that day, such as the time taken to discuss the procedure with their family, and the child's involvement in the decision-making process. Conveying information effectively and involving children and their families has been shown in the UK to generate better acceptance of this treatment (Bell et al, 2010). It has also been shown that clinicians feel the Hall Technique to be less traumatic for children (Gilchrist et al, 2013). Deeper investigation of the reasons for children's positive response requires further examination to help us begin to fully understand children's perceptions of, and responses to, dental treatment.

The qualitative findings support an overall positive reaction to the Hall Technique from the parents. A common theme that arose was parental perception of the longevity of the Hall crown over that of dental fillings. Three parents commented on the Hall crown being an effective alternative to the fillings that kept on falling out of their child's teeth, with one parent reporting "they (fillings) fall out...and then we have tears... because they don't want go back... with this (Hall Technique)...it's stayed on...we haven't had a problem with it". Although Elderton criticised the restorative cycle as being detrimental at the tooth level (Elderton, 1993), little research has been undertaken to investigate the effect on the child and family (and on health service costs and efficiency) of multiple visits to replace fillings. That parents raised this issue as a concern suggests that this repetitive work may be detrimental to children and families, although precisely why needs further investigation.

Individual feedback from some parents suggests that specific aspects of the treatment were less than ideal; negative experiences also arose when the Hall Technique was not successful, and the

tooth then required preparation. One parent reflected on her child's negative experience, saying "she (dental therapist) sliced and diced and there was blood...he was very uncomfortable... they ended up numbing him...I just wish we had gone for a filling...the amount of agony he went through...was in my opinion not worth it...I would've made a crown to fit his tooth". It is important to note that this does not appear to be a negative reaction to the SSCs themselves or the actual Hall Technique, but rather what was done when the attempt to place one failed. This suggests that perhaps more emphasis should be placed on informing parents of possible complications and alterations to the treatment plan, and also investigating how clinicians can act to ensure that these complications do not arise (for example, by finding a more accurate method for selecting the size of the crown, or a better way of modifying the crown shape). The experience of the clinician is also likely to play a part.

Parents' knowledge of dental caries and importance of the primary teeth was generally poor, although this did not appear to influence the acceptability of the procedure. This may indicate that the parent's comprehension of the technique was poor and further explanations of the process of leaving caries behind under the SSC may be needed.

As anticipated, parents raised concerns about their children being teased by their peers about the silver-coloured crown in their mouths. However, it is noteworthy that none of the parents in this study reported their child receiving any negative peer feedback at all. Parents commented on how special the child felt the crown looked, and they stated that the appearance did not bother these younger children (suggesting that aesthetics are not a primary concern of parents or children receiving SSCs). Bell et al (2010) also found that children and their parents expressed little or no concern about SSC appearance. A concern that a degree of social stigma may be involved with this procedure (or with SSCs) has been highlighted in earlier research, with the assertion that the use of this technique may be more appropriate for children and families from more deprived groups (Gilchrist et al, 2013). In the current study in Hawkes Bay, children from different social deprivation groups were represented, and parents raised concerns about their own peers judging them. For example, one parent commented: "It (the crown) makes me feel really bad...oh my god, everyone's gonna look at him and think, my god, what does this mother feed this child", and "They probably give me a hard time in the fact that they think I haven't looked after his teeth properly". From a lay perspective, visible dental caries in adults has been shown to incur negative social judgements (Kershaw et al, 2008). There is clear scope for investigation of the degree of social stigmatisation arising from a SSC acting as a visible marker of dental caries experience, and particularly this might manifest as the children grow older and feel more peer pressure to be 'normal' as they enter adolescence.

Finally, some methodological consideration is appropriate. In using qualitative methods, the researchers' own experiences and opinions can be viewed as a source of potential bias, because these can influence and impact on the findings' validity, given that these depend on coding clarity and the researchers' interpreting participants' responses (Reeves et al, 2008). To obviate this, we used investigator triangulation, with multiple researchers to generate a complex range of perspectives on the data, in order to enhance validity. This helped in fully exploring the transcripts and enabled comprehensive insights into perceptions of the Hall

Technique. The inductive nature of our design (in which themes were to emerge from the data we collected) meant that theory triangulation was not used; there were no apriori hypotheses to be tested. It also appeared that people felt more comfortable talking about their opinions in a one-on-one manner during the phone interview than in the group discussion environment. Participants may have been hesitant to speak up in the focus groups for fear of embarrassing themselves, or their opinions being judged by other participants (Berg, 2004).

There is a growing body of research on the acceptability of the Hall Technique, and the current study has added to this and also has identified areas of concern. Although parents accepted the Hall Technique and its application in the treatment of carious primary molars, it is important to reflect on the negative experiences that were reported. Future research should seek to clarify and deepen our understanding of perceptions of dental treatment and children's preferences for treatment.

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## REFERENCES

- Bell S, Morgan A, Marshman Z, Rodd H (2010). Child and parental acceptance of preformed metal crowns. *Eur Arch Paediatr Dent* 11: 218-224.
- Berg BL (2004). *Qualitative research methods for the social sciences*. 5th Edition, Pearson Education Inc, Boston.
- Chadwick BL, Evans DJP (2007). Restoration of class II cavities in primary molar teeth with conventional and resin modified glass ionomer cements: a systematic review of the literature. *Eur Arch Paediatr Dent* 8: 13-20.
- Elderton R (1993). Overtreatment with restorative dentistry: when to intervene? *Int Dent J* 43: 17-24.
- Gilchrist F, Morgan AG, Farman M, Rodd HD (2013). Impact of the Hall Technique for preformed metal crown placement on undergraduate paediatric dentistry experience. *Eur J Dent Educ* 17: e10-e15.
- Innes NP, Evans DJP, Stirrups DR (2007). The Hall Technique; a randomised controlled clinical trial of a novel method of managing carious primary molars in general dental practice: acceptability of the technique and outcomes at 23 months. *BMC Oral Health* 7: 18.
- Innes NP, Evans DJP, Stirrups DR (2011). Sealing caries in primary molars: randomized control trial, 5-year results. *J Dent Res* 90: 1405-1410.
- Kershaw S, Newton J, Williams D (2008). The influence of tooth colour on the perceptions of personal characteristics among female dental patients: comparisons of unmodified, decayed and 'whitened' teeth. *Br Dent J* 204: E9.
- Kindelan SA, Day P, Nichol R, Willmott N, Fayle SA (2008). UK National Clinical Guidelines in Paediatric Dentistry: stainless steel preformed crowns for primary molars. *Int J Paed Dent* 18 (Suppl 1): 20-28.

Marshman Z, Hall MJ (2008). Oral health research with children. *Int J Paed Dent* 18: 16-21.

Ministry of Health (2010). *Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey*. Wellington: Ministry of Health.

Mouridian WE (1999). Making decisions for children. *Angle Orthod* 69: 300-305.

Public Health Advisory Committee (2003). *Improving child oral health and reducing child oral health inequalities. Report to the Minister of Health from the Public Health Advisory Committee*. Wellington: Ministry of Health.

Reeves S, Kuper A, Hodges BD (2008). Qualitative research methodologies: ethnography. *Br Med J* 337: 1020.

Roshan D, Curzon M, Fairpo C (2003). Changes in dentists' attitudes and practice and in paediatric dentistry. *Eur J Paediatr Dent* 4: 21-27.

Salmond C, Crampton P (2002). NZDep2001 Index of Deprivation User's Manual: Department of Public Health. Wellington School of Medicine 2002.

Thomas DR (2006). A general inductive approach for analyzing qualitative evaluation data. *Am J Eval* 27: 237-246.

Vila Verde A, Ramos MMD, Stoneham AM (2009). Benefits in cost and reduced discomfort of new techniques of minimally invasive cavity treatment. *J Dent Res* 88: 297-299.

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## Obituary Michael Ngan

Dr Michael Ngan passed away on 24th October 2013 at the Elizabeth Knox Rest Home in Epsom, Auckland. Michael had suffered a medical lapse eight years earlier. He then sold his dental practice in Birkenhead and retired out of the profession. For the last few years, he had been attended to by his loving family. During the last few months, when his health took a turn for the worse, he became an inpatient at the Elizabeth Knox Rest Home.

Born in 1950, Michael started his tertiary education at Victoria University of Wellington, before going to the University of Otago Dental School, from where he graduated in 1973. I well remember Michael at Dental School a few years behind me. After one year at Hutt Hospital as a dental house surgeon and a year of private practice in Upper Hutt, he went on his overseas experience to England. On his return to New Zealand, he worked with Dr Tim Greenfield (Papatoetoe), Dr John Dell (Birkenhead) and Dr Anthony Wong (Te Atatu). He particularly enjoyed his time with Dr. Greenfield because they were both hard working and had a



Michael Ngan

quiet empathic nature towards their patients. Recently, some of his previous dental assistants recalled Michael's dedication to his patients. He was a caring diligent dentist and was well liked by the many patients that he treated. Later, he set up dental practices in Otahuhu and Birkenhead.

He was farewelled by family and friends at his funeral service at Purewa Cemetery and Chapel on Saturday 2 November 2013. Also present were many dental colleagues, such as his high esteem in the dental profession.

Being the oldest of three brothers and a sister, Michael influenced two of his younger brothers Brian (practising in Christchurch) and Roger (Auckland) to follow him into dentistry. Thus, the Ngan family (together with sisters-in-law Rhonda and Judy Wong, also dentists) have contributed much to the New Zealand dental profession.

Michael is survived by his loving wife Pamela and children Richard and Kathy, to whom we extend our deepest sympathy.

**PHILLIP LOWE**