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ORANGA WHĀNAU, ORANGA NIHO  
THE ORAL HEALTH STATUS OF 5-YEAR-OLD MĀORI CHILDREN.  
A CASE STUDY.

A thesis

submitted in partial fulfilment

of the requirements for the Degree

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by

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## **ABSTRACT**

Research has shown that the oral health of Māori is far worse than non-Māori across all age groups. The objective of this research study was to assess the dental wellbeing of 5-year olds with a specific focus on Māori children currently residing in the Hamilton City region. In addition, this research focused on the impact that social, economic, cultural and environmental factors have on oral health. A total of 32 participants were invited to take part in this research: 15 5-year-old children from three selected schools, 15 (of the children's) caregivers and 2 dental therapists who work in the Hamilton City region.

The findings indicated that overall Māori children and children of lower socio-economic status had a much higher prevalence of dental caries (tooth decay) than non-Māori children and children of higher socio-economic status. A number of contributing factors were shown to be responsible for this disparity including the cultural inappropriateness of oral health services and resources, affordability, role-modelling, parental awareness and education, and the transient nature of families.

It was found that no one strategy or intervention will achieve dramatic improvements in Māori oral health as a concerted effort is required by Local and Central Government, the Health Sector and Māori communities.

## ACKNOWLEDGEMENTS

This thesis would not have been possible if not for the many people who donated their own time and effort towards its publication.

To my whānau and friends who have helped me through the tumultuous times I faced during the past 12 months, I sincerely appreciate your guidance and unconditional support. I am particularly indebted to my cousin Vee and her whānau - Jay, Mal, Leah and Hemi. Thank you for always making me feel welcome in your home and your hearts.

Thank you also to those who have influenced the shape and content of my thesis, especially to my supervisor Materoa Dodd and Aunty Jane for your knowledge and expertise in this research area. Thank you also to Diane Pevreal and Joan Woodham for providing invaluable data and resources, and to Era Peihopa and Petra Te Amo for your help in co-facilitating the focus group interviews.

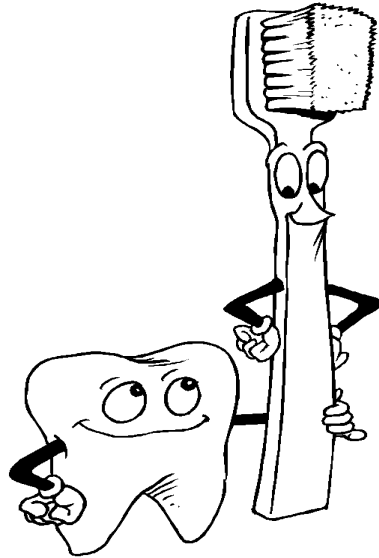
I would also like to extend my gratitude to my fellow work colleagues involved in the Te Kotahitanga Research Project. I feel extremely privileged to work each week alongside such a warm, talented and passionate group of individuals. Thank you for your continued support and the knowledge I have gained through this job.

Last but by no means least I wish to thank the representatives from the selected schools who helped me organise this research, and of course the participants in my study – the children, caregivers/ parents and the dental therapists.

*Ngā mihi nui ki a koutou katoa.*

## DEDICATION

*I dedicate this thesis to my cousin Vee.  
Thank you for being there for me when I needed help the most.  
I will never forget it.*



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## CHAPTER ONE: INTRODUCTION

### **BACKGROUND**

#### **Health**

The World Health Organisation (WHO) defines health as “a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity” (Durie, 1985, p. 483). Good health enables people to participate fully in society and provides the “means by which people can pursue their goals in life” (Durie 1985, p. 483; National Advisory Committee on Health and Disability, 1998, p20).

Māori interpretations of health however encompass a more holistic meaning than the WHO’s definition which is focused primarily on physical wellbeing. Durie (1985, p. 483) argues that “full appreciation of health requires an understanding of a particular culture rather than an assumption that health principles are equally relevant to all situations.” Māori interpretations to health also include spiritual, family and mental aspects as well as encompassing fundamental cultural elements such as land, environment, language and extended family (Durie, 1985, p. 483). As a result of this, models such as Te Whare Tapa Wha, Te Wheke, Ngā Pou Mana, Ngā Pūtake and Ngā Pou Ārahi were developed. (Durie, 1985; 1994; 1998).

#### **Oral Health**

It is well known that ‘good oral health’ is important for eating and speaking. It also affects facial appearance and is thus very important for socialisation. The term ‘oral health’ however is usually defined in terms of the absence of disease affecting the oral mucosa teeth, tongue and surrounding cranio-facial structures (Birse, 2004). Despite dental disease being preventable, diseases of the teeth and gums (such as oral cancer, gum disease, congenital disorders and oral facial trauma) are among the most common health problems for all age groups (Kamira, Cambell, T. & Cambell, S. 1999). The



major focus of this thesis however is on dental caries. Dental caries is the most common chronic infectious disease of childhood said to affect approximately 50% of all New Zealand children (Birse, 2004; Kamira et al., 1999).

## **Ethnicity**

Where possible, this thesis compares the oral health statuses of Māori and non-Māori (meaning all other ethnic groups *excluding* Māori). The term 'ethnicity' in this thesis means the broad ethnic identity rather than a narrow biological definition based on genetic make-up (National Advisory Committee on Health and Disability, 1998).

## **FOCI**

It is well documented that indigenous communities throughout the world are clearly disadvantaged in all aspects of daily living (Durie, 1998a). Unfortunately, in New Zealand, Māori are no different. Studies show that colonisation and land alienation have created Māori/ non-Māori inequalities. A primary cause of health inequalities include inequalities in the distribution of and access to material resources, income, employment and housing.

A focus for this research centres on child oral health. Good oral health is said to contribute significantly to general overall wellbeing. However, for Māori children, lower standards of oral health compared to non – Māori generally results in a reduction in wellbeing. This predicament has been long recognised at all childhood age groups and at local, regional and national levels (Broughton, 1993).

Given this, the objective of this research study was to access the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. This research also focuses on the impact social, economic, cultural and environmental factors may have played on oral health. A total of 32 participants were invited to take part in this research study: 15 5-year-old children from three selected schools as well as 15 (of the children's) parents/ caregivers and 2 dental therapists who work in the Hamilton City region. Further, my research methodology comprised of focus group meetings, semi-

structured interviews and written questionnaires. Random and purposive sampling methods were applied.

This study is significant and equally unique because despite the severity of Māori children's oral health in Hamilton City of this nature, albeit small in scope, had not been undertaken in this region before.

Chapter Two describes the purpose and significance of the study in greater detail by encompassing what others have said on the issue. Chapter Three describes the methodological approaches employed in the research study, more specifically how the research was organised and conducted. Chapter Four presents the findings from the research study and discuss the findings with respect to the objectives and relevance of the literature. The latter part of this chapter examines the limitations of the study. Finally, Chapter Four describes the contributions made by this study and its applicability for further research. This chapter concludes by providing recommendations based on this study.

## **CHAPTER TWO: LITERATURE REVIEW**

The objective of this chapter is to outline the purpose and significance of the study and to investigate what others have said on the issue. The bulk of this chapter focuses specifically on the current oral health status of Māori children and the factors that have lead to their position as a severely disadvantaged group. The latter part of this chapter explores possible solutions to this problem in both broad and specific contexts.

### **CHILD ORAL HEALTH INEQUALITIES**

Oral health contributes significantly to general overall wellbeing. Good oral health is important for eating and speaking and also affects facial appearance and thus socialisation (Birse, 2004). However, for Māori children, lower standards of oral health (compared to non – Māori) correspondingly results in a reduction in wellbeing (Broughton, 1993). Oral health problems can cause severe pain and discomfort for the child and can contribute to a reduction in self-esteem and absenteeism from school (Ministry of Health, 2004). Moreover, child oral health inequalities are also said to be the foundation for adult oral health inequalities (Ministry of Health, 2004).

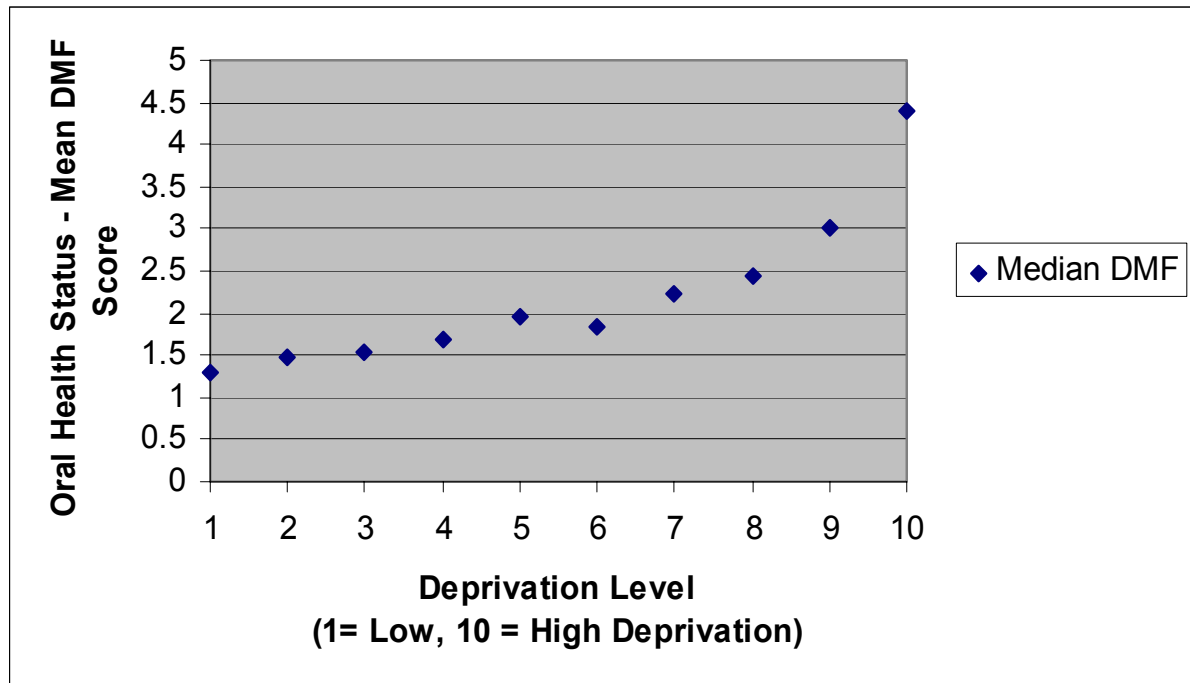
According to a recent report published by the National Advisory Committee on Health and Disability (2003), child oral health inequalities are likely to be greater at 5 years of age than at any time for a number of reasons including:

- ethnic and socioeconomic differences in the uptake of preschool dental services mean that caries differentials are likely to be greatest
- oral health status at 5 years of age reflects household conditions and self and nutritional care practices and there is less confounding by actual dental treatment
- other factors being equal the development and progression of dental caries in the deciduous teeth is more rapid, meaning that there is less delay time between changes in determinants and the succeeding appearance or absence of disease.

Other studies have extensively examined the correlation between material deprivation and dental caries among 5-year-old children (Brown and Treasure, 1992). Provat and Carmichael (1999) for example examined the Townsend index of material deprivation and its relationship to the prevalence of dental caries among 5-year-old children. They showed a correlation between the level of material deprivation and the level of dental caries, with mean dmft values increasing from 1.1 in the most advantaged group to 1.9 in the most deprived group. In another example Gatrix and Holloway (1994) concluded that communities with greater caries severity were found to have lower proportions of babies of normal birth weight and children living in two parent families. They also had lower levels of home and car ownership and fewer households in the highest social classes (Brown and Treasure, 1992).

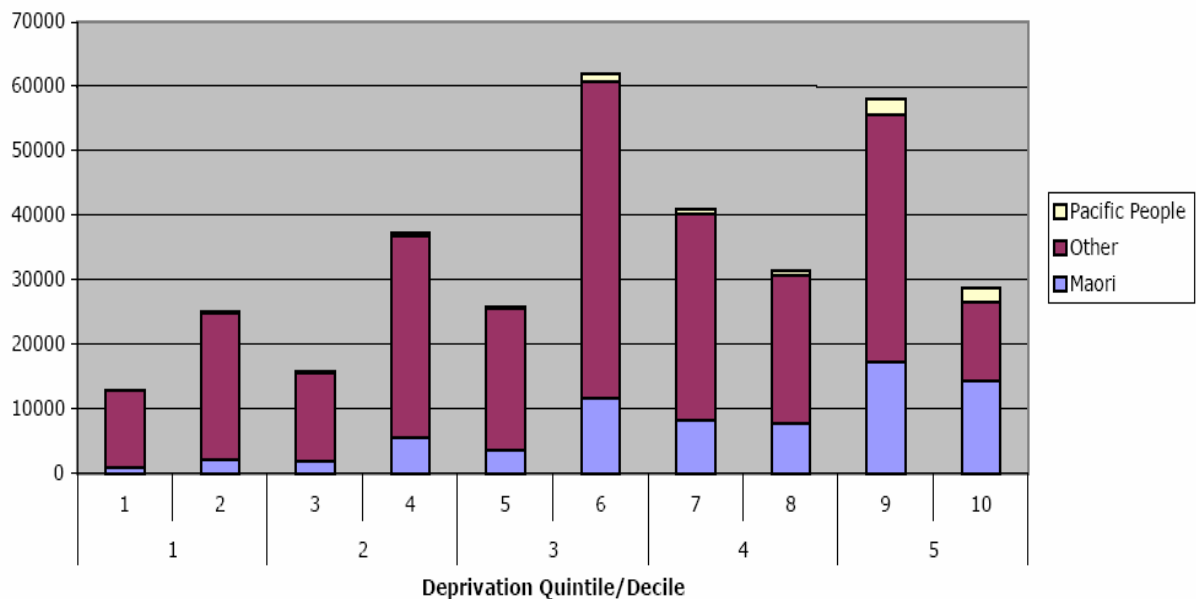
The following graph highlights the relationship between dental caries of 5-year-old children and socio-economic factors. Those 5-year-olds from the highest deprivation group (deprivation score = 10) have 3 - 4 times the caries experience of the lowest deprivation group (deprivation score = 1). While the data is from northern New Zealand, anecdotal evidence suggests this is a national trend (Koopu, 2004; MidCentral DHB, 2004).

**Figure 2.01 Relationship between the Oral Health and Socio-Economic Factors of 5-Year-Olds in Northern New Zealand (1988)**



Furthermore, Figure 2.02 shows that Māori are far more likely than non-Māori to live in the most deprived areas of New Zealand (56% of Māori live in areas with a deprivation index of 8 or more compared to 24% of non-Māori). In contrast, non-Māori are more likely to live in areas recording a lower deprivation score (35% live in areas with a deprivation index of 3 or less compared to 12% of Māori) (Waikato DHB, 2004).

**Figure 2.02 2004 New Zealand Population by Ethnicity and Deprivation Deciles**



A number of arguments have been presented in support of reducing child oral health inequalities by improving the oral health of the most disadvantaged groups (National Advisory on Health and Disability, 1998). These include:

- child oral health inequalities are reducible
- reducing child oral health inequalities is equitable because children have limited control over the (structural and other) factors which determine their oral ill health i.e. employment policies
- reducing child oral health inequalities benefits wider society by both freeing scarce health system resources and reducing the time parents/ whānau spend away from more productive activity (National Advisory on Health and Disability, 2003).

## **ORAL HEALTH OF MĀORI CHILDREN**

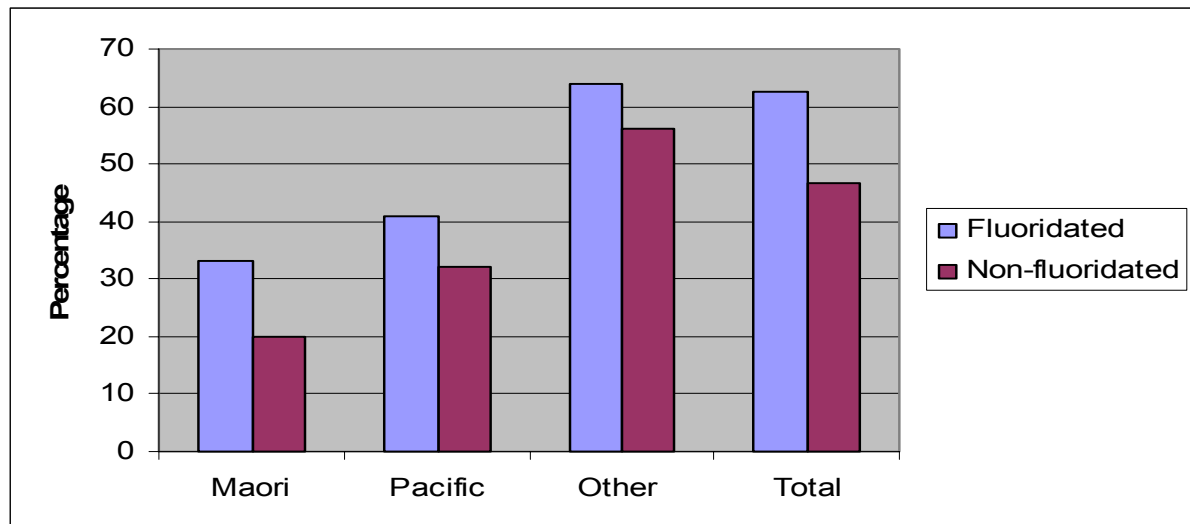
Overall, Māori children generally have poorer oral health, greater exposure to oral health risks and poorer access to oral health services than non-Māori children (National Advisory Committee on Health and Disability, 1998; Waikato DHB, 2001).

A number of studies have examined the oral health status of Māori and non-Māori 5-year-old children. An examination of preschool aged children is the first possible indicator of this disparity. One prominent study indicated that Māori were three times more likely than non-Māori children to not be enrolled in the SDS as pre-schoolers (Broughton, 2000). Following on from this, an analysis of 1992 school dental service data on 3, 283 5-year-olds in the Manawatu-Wanganui area showed that Māori children were three times more likely than non-Māori children to have had high caries experience (that is, a mft score greater than 4) (National Advisory Committee on Health and Disability, 2003)

Although the Manawatu-Wanganui data were collected 15 years ago, evidence from national and regional SDS data suggests that those ethnic inequalities in oral health are likely to have persisted or even worsened (Broughton, 1993, Brown and Treasure, 1992). For example, the Northland DHB 2003 SDS data show that the caries-free portion was 43 percent among non-Māori 5-year-old children, but only 16 percent among Māori 5-year-old children. In the Hawkes Bay DHB, the data reveals that the caries free proportion was 62 percent among non-Māori 5-year-old children residing in fluoridated areas, while only 25 percent of Māori 5-year-old children in those communities were caries free (Koopu, 2004; Ministry of Health, 2004). In the Eastern Bay of Plenty region in the late 1990s, one in four Māori were unaffected by caries, however the figure was significantly less for non-Māori (6 out of 10).

Figure 2.03 typifies the current situation of oral health among Māori 5-year-old children. As the graph indicates Māori are less likely to be caries free than Pacific and Other ethnic groups in both fluoridated and non-fluoridated areas (Waikato DHB, 2001).

**Figure 2.03 Percentage of children caries free at age 5, by ethnicity and fluoridation status 2004**



## **BARRIERS TO CARE**

Despite the availability of the public dental health care system in New Zealand, Māori display a low utilisation rate of these services. In general, poor oral health status of many Māori, including children, indicates there are barriers to public dental care delivery systems (Broughton, 2000). These barriers have been outlined below (HFA, 2000; National Advisory Committee on Health and Disability, 2003).

### **Racism**

As is the case with other indigenous peoples throughout the world, Māori continue to experience racism, an ongoing consequence of its colonised history. Many academics have described institutionalised racism and the ongoing effects of our history of colonisation and land confiscations (for example, through narrowing the Māori economic base and reducing Māori political influence as underlying drives for ethnic inequalities in health and in health care (Koopu, 2004; Waikato DHB, 2005).



More particularly, racism refers to:

- a general sense of marginalisation by Māori in relation to mainstream service provision
- a distrust of institutions and services because of experiences of racism
- a perception of Māori perspectives and opinions being ignored, and/ or lack of knowledge about cultural and spiritual needs and requirements
- high levels of poor self-esteem resulting from racism and internalised racism, which can be exacerbated by poor health and a socially disadvantaged position, often leading to difficulty in stating effectively what is wanted and needed (Waikato DHB, 2001).

The lack of Māori specific resources and Māori oral health professionals, as well as the cultural inappropriateness of oral health services are three examples of this.

### ***Māori Specific Resources***

Māori specific resources (for example, people (i.e. children, marae, communities) or objects (i.e. brochures, posters, books, balloons and clothing (Kamira et al., 1999) are one of many critical tools that can educate and promote positive oral health messages for Māori parents, families and children. However, compared to other child health areas, oral health resources are under-developed and not always culturally appropriate. Using past initiatives as a template, any successful strategy needs to be simple and clear, and incorporate initiatives for, by and with Māori (Broughton, 2001).

### ***Māori Oral Health Professionals***

Māori remain under-represented in the New Zealand oral health workforce despite Māori participation at all levels (including those in statutory governance, management, policy advice and teaching) (HWAC, 2003). For example, only two percent of current dental technicians identify as Māori. Given that Māori have worse oral health than non-Māori attracting more Māori into the dental profession have been identified as a priority, particularly in order for kaupapa Māori services to be adequately resourced and supported.

### ***Cultural Appropriateness of Oral Health Services***

Many health professionals are not aware of the cultural factors pertaining to Māori beliefs, attitudes and practices regarding health i.e. the tapu of the head. Dr Justin Wall of the Health Research Council stated that “Māori and Pacific peoples like to take their teeth home with them if they have teeth extracted, but that’s not readily available” (Health Research Council Newsletter, 1995). In addition, most dental surgeries are not equipped to accommodate for whānau members who come in support of the patient. Because of this many Māori for example will not present for dental care or will only do so when the “pain has driven them there” (Broughton 2000; Health Research Council Newsletter, 1995; National Advisory Committee on Health and Disability, 2003).

### **Parental/ Whānau Influences**

#### ***Educational Achievement***

It is well documented that Māori have lower levels of education achievement than non-Māori (Ministry of Māori Development, 2001). The association between child oral health status and the educational level obtaining by the parents (usually the mother) has been investigated in a number of studies. Studies have shown that the caries experience of the child is likely to be greater if the parents (particularly the Mother) are poorly educated themselves. In general, highly educated people have more favourable dental health behaviours, such as lower sugar consumption, more frequent brushing, and a routine dental visiting pattern (Broughton, 2000; National Advisory Committee on Health and Disability, 2003).

A longitudinal study involving 828 Finnish children found that the higher the mother’s educational level, the more likely that her child would be caries free at 5 years of age. Similarly, an Irish study of 294 preschool children reported that maternal education was considerably associated with dental caries at three and a half years of age in a cohort of 786 children. In a recent study, a cross sectional study of 4315 children aged three to 15 years caries were higher for children whose parents had low levels of education.

Maternal education has also been found to influence a child's dental attendance. Thomas and Startup (1991) reported that 70 percent of 405 mothers with A levels but only 39 percent of less educated mothers, had taken their child to a dentist before the age of three years.

Parental education levels also appear to influence the adoption of good dental behaviours. Kinirons and McCabe (1995) found that children of well educated mothers brushed their teeth more often (National Advisory Committee on Health and Disability, 2003).

### ***Attitudes***

Negative attitudes towards dental services is still very widespread among Māori, especially adults, and may lead to some Māori parents (and their whānau) avoiding contact with the SDS (National Advisory Committee on Health and Disability, 2003).

In the 1996 study undertaken by Broughton and Koopu half of the respondents in the study had negative opinions of their experience with the SDS and described it as something "horrible" and were "scared to go". Many people held specific fears of the "murder house". These fears focused upon, the injections, the buzzer, the pain, the smell, the lights, the unknown, and the dental therapist herself. A number of people also described the coping mechanisms they used to overcome their fears such as delaying tactics, disruptive behaviours and crying (Broughton, 1996a; HFA, 2000).

Parents may also be embarrassed about their own oral health and consequently avoid taking their preschool children to the school dental clinic (National Advisory Committee on Health and Disability, 2003).

Overall, parents who ignore their own personal oral health care are poor role models for their children. Oral health care is learned behaviour and if the parent or caregiver does not practice oral health care, their children are not likely to comply (Broughton, 2000).

### **Awareness**

According to Broughton (2000) Māori are uninformed of what public dental health services are available. Broughton and Koopu found that many Māori are unaware they can take their pre-school children to the nearest school dental therapist. As with the Dental Benefit Scheme, some whānau believed that the School Dental Service was not a free service

### **Compliance**

Ensuring patients utilise dental services and keep appointment times is problematic among Māori families. In Northland for example, although there is a relatively high enrolment of Māori pre-schoolers with the SDS unfortunately there is a very poor compliance with keeping appointments. In some areas there has been a significant non-enrolment in the Dental Benefit Scheme by Māori young people and, if they are enrolled, there is a noticeable drop out rate (Broughton and Koopu, 1996). For example, the Midland Regional Health Authority has reported that 50 percent of eligible Māori teenagers do not access the Dental Benefit Scheme. Anecdotal evidence from Māori community health workers reveal that peer pressure is a barrier; some rangatahi feel it's "not cool" to go to the dentist (Broughton, 2000).

### **Socio-Economic Factors**

Affordability is often a major barrier for Māori families. The New Zealand Planning Council reported in 1987 that Māori people have a "generally disadvantaged social and economic position, a position which is associated with ... diminished access to primary and preventative health services". For example, it is reasonable to presume that, because Māori are over-represented in the lower socio-economic deciles and hence have a limited spending power oral health care would take a low priority among the weekly necessities. For example in the 1996 study undertaken by Broughton and Koopu one person in the study typically responded, "I'd rather make sure my phone bill is paid before I worry about my teeth" (Broughton, 2000; Ministry of Health, 2003a).

The marketing of junk foods and soft drinks is also another decisive factor for many Māori families. By volume, milk is considered more expensive than the leading soft drinks (Broughton, 2000; National Advisory Committee on Health and Disability, 2003). Increased consumption of soft drinks is associated with their decreasing cost. From 1988 to 1998 there was approximately a 50 percent decrease in the cost of soft drinks, while over the same period the price of milk has almost doubled (Ministry of Health, 2003a). High soft drink consumption in children in the USA is associated with lower milk and fruit juice consumption and thus lower intakes of calcium and vitamin C (Ministry of Health, 2003a).

However, the problem it appears may be more a matter of prioritising given that the public dental care is free to all New Zealanders under the SDS, the Dental Benefit Scheme, and the low-income criteria. Furthermore, according to Diane Pevreal, Waikato DHB Principal Dental Officer, “there are toothbrushes to meet every price range. You can buy 10 toothbrushes from a two-dollar store” (Monahan 2005, August 27). Given this analogy, the challenge, I believe, has more to do with changing the mindsets of Māori parents rather than blaming their limited income levels. According to Broughton (2000) many Māori parents, prioritise Rothmans over Colgate within the limited household budget.

### **Location and Mobility of Whānau**

Distance and a lack of adequate transport (including the cost of transport) may prevent Māori from accessing oral health services, particularly in rural or isolated areas, where not only is the school dental clinic some distance away, but the dental therapist may only be there for a few weeks every year. In addition to this, access to topical fluoride may be lower for many Māori. Fluoridated public water supplies are seen only in larger communities, and many Māori live in non-fluoridated rural areas. If toothpaste is not purchased, the whānau miss out on the most effective alternative means of gaining fluoride.

The transient nature of many Māori families coupled with the mobility of dental therapists is also a grave concern. Often this means that children themselves attend multiple schools. Since the number of practicing dental therapists has almost halved since 1990 many dental therapists are required to take charge of three or more dental clinics, with a limited time spent at each. Accordingly, given the mobility of both the child and the therapist, the odds of the child missing out on dental care is greater (National Advisory Committee on Health and Disability, 2003).

### **CHILD ORAL HEALTH INITIATIVES IN THE HAMILTON CITY REGION**

Improving child oral health in New Zealand requires change at local, regional and national levels. For the purpose of this thesis, this section discusses those strategies employed in the Hamilton City region.

#### **Child Oral Health Services**

Throughout New Zealand the School Dental Service (SDS) provides basic preventative and restorative dental care for preschoolers, primary and intermediate school children. The care is provided by dental therapists employed by DHBs. Dental therapists are health care providers who have undertaken two or three years training in primary oral health care. They work independently under indirect supervision by Principal Dental Officers. Dental therapists aim to see children annually, unless six monthly visits are indicated by a high risk of dental disease, usually determined on the basis of past disease experience.

Children are referred to a general dental practitioner for dental care that is beyond the scope of this service. This includes the provision of root canal treatment, management of dental trauma or the extraction of permanent teeth. Some children with extensive treatment needs, particularly if they are very young, may be referred to hospital dental units for dental treatment under general anaesthetic (National Advisory Committee on Health and Disability, 2003).

## **Child Oral Health Initiatives**

Apart from providing basic preventative and restorative dental care to children the role of the dental therapist is to undertake individual dental health education and counselling. In the classroom, school teachers have the responsibility of including oral health as part of the health curriculum.

The Regional Dental Health Promoter leads Training of Trainers Sessions that assist in community based groups to promote oral health. They emphasise the updating of information for working in the community. Providers attending these sessions include Plunket/ Kaiāwhina Midwives, Practice Nurses, Raukura Hauora Tainui iwi workers, Parents As First Teachers group and Parents Groups. The Regional Dental Health Promoter also maintains linkages with other providers and community groups involved in oral health. These include the Child and Family Service Providers Network, Well Child community groups and Te Kete Manaaki Health Services (Waikato DHB, 2004).

The Ministry of Health plays a fundamental role in providing a number of these curriculum based resource materials such as posters, pamphlets and information booklets. These are available in several languages including Māori. Another health promotion medium is a short play that introduces children in oral health messages with organised resource materials. English and Te Reo Māori versions of the 'Milly Molar Oral Health Play' are used in regional schools and Kohanga Reo. Colgate's Bright Smiles, Bright Futures Oral Health Education kits are provided to primary school teachers and dental professionals free of charge. These kits contain among other things: dental health related posters, videos, informative pamphlets for parents and oral health message stickers. Some of these resources such as the stickers and information pamphlets are available in te reo Māori (Colgate Professional, 2006). However, the kits are only available in small quantities and at limited times throughout the year (Waikato DHB, 2004).

In recent time, two community health initiatives have been undertaken to increase preschool enrolment in the SDS. The first example is 'Tiakina o Niho' held at Insoll Ave

School in 2003 and the second is 'Hauora Tamariki' held at Crawshaw School in 2006. In both instances children who were screened were given dental health enrolment forms and free dental resource kits containing a toothbrush, toothpaste, information pamphlets and activity resources.

'Project Energise' (which started in 2005) aims to test the effects of changing children's diets and exercise in 62 Waikato primary schools, compared with 63 "control" schools that do not receive the programme. All pupils in the 11 decile 1 schools receive one free piece of fruit daily through the Government's Fruit in Schools schemes, and 5- and 6-year-olds in those schools are getting free milk from Fonterra. Children in decile 2 to 4 schools are getting a free apple a day through the winter months, thanks to a Hamilton orchardist and the Perry Foundation (Collins, 2006; Waikato DHB, 2004).

### **Water Fluoridation**

Water fluoridation is the most cost effective form of providing fluoride for the community (Waikato DHB, 2006a). Fluoridation benefits everybody regardless of age, ethnicity, or social class but particularly children and the elderly who are most at risk of tooth decay, and those who cannot afford toothpaste and brushes, a healthy diet, and regular dental care.

Numerous studies show a dramatic increase in decay rates when communities stop fluoridation. In the Hamilton region alone this would mean up to 1, 730 extra fillings and 296 avoidable tooth extractions. The Public Health Commission determined fluoridation prevented up to 12 decayed, missing or filled teeth per person. Current data show Hamilton children have better teeth than children in non-fluoridated areas. Fluoridation can reduce decay in adults by 15-35% and in children by up to 60% (Taylor 2006, April 28).

Results of the Hamilton City Council's recent water fluoridation poll (2006) indicated that 70% of Hamilton City residents wanted to retain water fluoridation in the city's water



supply despite only 33, 500 people, or 38% of eligible voters, returning their papers. (Lewis 2006, May 17).

## **PRINCIPLES FOR POSITIVE MĀORI HEALTH DEVELOPMENT**

According to Durie (1998b; 2001), health cannot be fully appreciated without looking at its broader context. Therefore for Māori, improving wellbeing must extend beyond any discussion focussed purely on narrow (and obvious) considerations. Delegates from the 1984 Hui Taumata, the Māori Economic Summit Meeting concluded that passive dependency on the state would never deliver positive outcomes for Māori. The hui identified *self-determination*, *integrated development* and *tikanga Māori* as three fundamental principals for positive Māori health development.

### **Self-Determination**

Durie affirms that positive Māori health development is essentially grounded in self-determination. Self-determination encompasses two meanings. Firstly, it is about the right of Māori people to exercise authority in the development and control of resources that they own or are supposed to own, and to interact with the Crown according to their own needs and inclinations. Secondly, self determination refers to the right of Māori, collectively and at a national level, to determine their own policies, to actively participate in the development and interpretation of the law, to assume responsibility for their own affairs and to plan for the needs of future generations (Durie, 1998b; 2001).

### **Integrated Development**

#### ***Health Policy Development***

Over the past 20 or so years there has been sweeping changes in health policy moving towards deregulation and a user pays system. This has proven to be advantageous for Māori particularly in the delivery of health services. The establishment of community focused services and the increase in the number of Māori health providers has allowed Māori to adopt new strategies for health. More importantly, these services have been associated with increased health awareness and greater participation of Māori in health decision making.

Furthermore, Durie noted, “[A]lthough there is no evidence that there has been a parallel improvement in health status, the new health policies appear to recognise Māori health as a priority health gain area and they have affirmed culture as a critical determinant of health.”

Therefore, policy development concerning Māori must make sense according to te ao Māori not just in economic and social terms.

### ***Participation in Society***

A second area that will impact on Māori health status in the future is the extent to which Māori will be able to participate fully in education, economic status and decision making (Durie, 1998b). Good health is dependent on the terms under which people participate in society and on the confidence with which they can access justice, sport and recreation, a meaningful job, an adequate household income, or most importantly, quality education and the school of their choice.

Closing the Gaps is a current Government policy that aims to reduce Māori and non-Māori disparities. In some ways Closing the Gaps contradicts Capacity Building, another Government initiative. Closing the Gaps focuses on a deficit model of Māori development (using non-Māori as the benchmark) while Capacity Building emphasises Māori self determination and strengthening the Māori people.

It is important that a balance between the two approaches is struck otherwise there is a risk that policies will be formulated according to Māori being a marginalised minority.

The terms under which Māori participate in society is also dependent on the constitutional position that Māori occupy in New Zealand. That will depend on how the Treaty of Waitangi is recognised, not only in terms of Treaty settlements, or of reducing socio-economic disparities but in relationship to governance and the future development of this country (Durie, 2003).

### **Access to Māori Culture**

For indigenous groups throughout the world cultural identity is considered to be a critical prerequisite for good health. Language and land alienation, for example, are common areas which illustrate where cultural identity has been depleted. According to the 2001 Census, only one in four Māori were able to speak the Māori language, whilst nearly one half of Māori language speakers are under 25 years of age (Statistics New Zealand, 2001). Land alienation is another example. Anecdotal evidence suggests that fewer than half of all Māori have any ongoing links with tribal land or regular access to a marae. In addition there are reduced opportunities for cultural expression and cultural endorsement within society's institutions. As a result, too many Māori are unable to have meaningful contact with their own language, customs, or inheritance, while too few institutions in modern New Zealand are geared towards the expression of Māori values let alone language.

According to Durie (2003, p.163) access to supportive and reliable whānau is critical to te ao Māori. Furthermore "whānau are where the greatest influence on children and adolescents comes from and where the adoption of positive lifestyles is possible and where a strong sense of identity is shaped" (2003, p.163). Although tribal (iwi and hapu) development has been a government focus since the 1980s, more attention and investment needs to be made at whānau levels.

### **IMPROVING THE ORAL HEALTH OF MĀORI CHILDREN**

According to the National Advisory Committee on Health and Disability (2003) improving child oral health among Māori essentially requires attention at three levels:

- (1) Local and Central Government (including Policy advisors and decision makers, especially the Ministry of Health, the Minister of Health and Cabinet colleagues);
- (2) the health sector (including DHBs, hospitals, non-government organisations and primary health care organisations)
- (3) Māori communities.

## **Government**

The main drive to reduce oral health disparities between Māori and non-Māori must come as a partnership approach between the health sector (including the dental profession) and the Māori community. The Government's objective for Māori health stipulates that "[t]he Crown will seek to improve Māori health status so that in the future Māori will have the same opportunity to enjoy at least the same level of health as non-Māori" (MAF, 2002).

To achieve this objective, a fundamental point is the Treaty of Waitangi. Implicit within the Treaty are the concepts of partnership, participation and protection (table 2.01) all of which are important to Māori health. According to Pomare and de Boer (1989), poor standards of Māori health may therefore be regarded as non-fulfilment of these Treaty obligations.

**Table 2.01 Treaty of Waitangi principles (Waikato DHB, 2005)**

TREATY OF WAITANGI PRINCIPLES
<i>Partnership</i>
<ul style="list-style-type: none"> <li>▪ A relationship which supports shared decision making between both partners and enables Māori to exercise control, authority and responsibility for their health</li> <li>▪ Working together with iwi, hapu, whānau and Māori communities to develop strategies for Māori health gain and appropriate health and disability services</li> </ul>
<i>Participation</i>
<ul style="list-style-type: none"> <li>▪ To establish and maintain processes to enable Māori to participate in, and contribute, to strategies for Māori Health Gain</li> <li>▪ To foster the development of Māori capacity for participation in the health and disability sector and for providing for the needs of Māori</li> <li>▪ Involving Māori at all levels of the sector in planning, development and delivery of health and disability services</li> </ul>
<i>Protection</i>
<ul style="list-style-type: none"> <li>▪ Ensuring that Māori have equal access to services and the right to achieve health outcomes equal to non-Māori</li> <li>▪ Ensuring Māori enjoy at least the same level of health as non-Māori and safeguarding Māori cultural concepts, values and practices.</li> </ul>

Partnerships occur at all levels between the health sector and the Māori community.

Health Sector:

- *e.g. Ministry of Health, the HFA, DHB's, Hospital Health Services, the SDS, the Dental Council of New Zealand, the NZDA, the New Zealand Dental Therapists' Association, the New Zealand Dental Hygienists' Association, practitioners and the Health Research Council.*

Māori Community:

- *e.g. Ministry of Māori Affairs; TPK, te iwi Māori (Māori tribal authorities and urban Māori authorities); Te Ao Marama, Māori organisations at national, regional and local levels, for example, the MWWL and Auahi Kore (Broughton, 2000).*

### **The Health Sector**

The NZDA report *Oral Health Goals for the New Millennium* (Edward et al., 1999) identified Māori oral health as a key issue, and set out specific targets for the dental profession to work towards in partnership with the Māori community. Specific targets for Māori children included:

- ensuring that all Māori preschoolers enrol with and access treatment through the SDS, and
- increasing the proportion of Māori 5-year-olds with caries-free deciduous dentitions to be equal to that of non-Māori .

At the service provision level, dental providers who are contractors with the DHB must ensure that the delivery of their service is culturally appropriate for Māori.

At the education/ training level, only since the last decade Māori culture and health has been an important aspect of undergraduate education for dentistry and has been part of the dental therapy training since 2000. (Miller, 2004; National Advisory Committee on Health and Disability, 2003)

### **Māori Health Community**

Community based initiatives involving support, awareness and broad whānau, hapu and community

### ***Te Ao Marama (New Zealand Māori Dental Association)***

Te Ao Marama, the Māori Dental Association, provides a valuable forum and body of expertise, recognised as “strongly Māori directed and driven” (HFA, 2000 p. 28). Its focus is on developing Māori oral health initiatives and for participating at all levels in

issues pertaining to Māori oral health. It has acted as an effective lobby group being responsible for the HFA Board's identification of oral health as a priority area for Māori health gain, and provides a voice for Māori oral health at an assortment of national oral health forums (National Advisory Committee on Health and Disability, 2003). The organisation retains close links with the NZDA, the Dental Council for New Zealand, and the New Zealand Dental Therapists Association. Te Ao Marama also holds annual hui and publishes a journal containing research and commentary (HFA, 2000).

### ***The Māori Community Health Worker***

The Māori community health worker (otherwise referred to as the Māori oral health educator) provides an essential community based link between whānau and dental services (primarily the SDS). According to Betty (1998),

*The role of the community health worker is probably the most important person in dental health education of our people. Only through education and motivation can a behaviour change take place, and only then will we see our tamariki improve their oral health.*

Most Māori Community Health Workers are employed either by a Māori provider or by the SDS.

### ***Māori Dental Provider Services***

It is widely acknowledged that one of the main strategies to reduce the disparities in health status between Māori and non-Māori are what is referred to as “by Māori for Māori” dental provider services. Examples of such services include: (National Advisory Committee on Health and Disability, 2003)

- Tipu Ora (Midland Health) Tunohopu Health Centre, Ohinemutu, Rotorua
- The Mid-North Pilot Project (Northland Health and Ngāti Hine Health Trust)
- Te Whānau o Waiparae Trust and Te Puna Hauora o Te Raki Paewhenua Programme (West Auckland, South Auckland and North Shore)

- Ratana Orakeinui Trust (Central Health) Ngāti Rangi Community Health Centre, Okahune (Wanganui)
- Te Whare Kaitiaki, School of Dentistry, Dunedin
- Ngāti Porou Hauora, Ruatoria (Durie, 1994).
- Te Atiawa Medical Centre, New Plymouth (Broughton, 2000).

## **CONCLUSION**

Across all age groups, Māori do not enjoy the same oral health status as non-Māori (Broughton 1993, 1995), but the situation is particularly alarming for children. Over the last decade, there has been an increased recognition of improving Māori oral health in Local and Central Government, the Health Sector and Māori health community, however, there is still along way to go before oral health inequalities can be reduced and Māori children can enjoy the same oral health status as non-Māori children. For Māori, the Governments commitment to the Treaty of Waitangi principles of partnership, protection and participation are central to addressing child oral health inequalities (National Advisory Committee on Health and Disability, 2003). In addition to this, improving Māori wellbeing must extend beyond narrow and obvious considerations. Durie (1998b; 2001) for example identified Māori self - determination, integrated development and increased exposure of Māori to their culture are considered paramount towards improving this position.



## CHAPTER THREE: METHODOLOGY

The objective of my research was to assess the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. My research focused on the impact that social, economic, cultural and environmental factors have on oral health. A total of 32 participants were invited to take part in this research study: 15 5-year-old children from three selected schools, up to 15 (of the children's) caregivers and 2 dental therapists who work in the Hamilton City region. My research methodology comprised of focus group meetings, semi-structured interviews and written questionnaires.

This study was significant and equally unique because despite the severity of Māori children's oral health in Hamilton City, a study of this nature while limited in scope had not been undertaken in this region before.

### **KAUPAPA MĀORI RESEARCH**

Since colonisation, research produced by non-Māori researchers has often compared Māori to non-Māori using the supposedly 'universal' norms of western society and disregarding the unique history, society and culture of Māori people. The process of drawing comparisons has meant that blame has been put on Māori as they have been seen as being in need of change in order to meet the norms of the western world and non-Māori society (Cram, 2001b). Teariki, Spoonley and Tomoana (1992) claim that research has been used to sustain one group and disempower another. Te Awekotuku (1991, p.13) explains that:

*Research is the gathering of knowledge – more usually, not for its own sake, but for its use within a variety of applications. It is about control, resource allocation, information and equity. It is about power.*

Kaupapa Māori Research (KMR) featured prominently by several Māori academics from the late 1980s and the early 1990s as resistance to the “hegemony of the dominant discourse” (Bishop, 1999; Irwin, 1994, p. 148). Cunningham (1998) has noted that while there is not yet consensus on a definition of KMR there are a number of emerging themes in the literature. Most prominent is research which has positive outcomes for Māori, and the notion of challenging the dominance of the Pakeha world view in research (Herbert, 2001).

Smith (1995) is even more explicit, “kaupapa Māori research is research by Māori, for Māori and with Māori.” To extend upon this point Irwin (1994) defines KMR as research that is ‘culturally safe’ and involves the mentorship of kaumatua which is culturally relevant and appropriate while satisfying the rigor of research and which is undertaken by a Māori researcher, not a researcher who happens to be Māori.

For Reid (1998) kaupapa Māori challenges a universal approach [and must be] able to address Māori needs or give full recognition of Māori culture and values systems. Smith (1995) adds Māori knowledge was never universal as it was considered tapu which had sanctions imposed to ensure its protection and that it was, transmitted appropriately and accurately through oral tradition supports this. Likewise Henry (1999) contends that KMR embraces traditional beliefs and ethics whilst incorporating contemporary resistance strategies that embody the drive for tino rangatiratanga and empowerment for Māori people. Bishop (1997) enforces this message and claims that KMR must be founded on self-determination, legitimacy, authority and empowerment.

In summary, Smith states that KMR (a) is related to ‘being Māori;’ (b) is connected to Māori philosophies and principles (c) takes for granted the validity and legitimacy of Māori, the importance of Māori language and culture and (d) is concerned with ‘the struggle for autonomy over our own cultural well being’ (Cram, 2001a; Koopu, 2004; Smith, 1999).

## **MOTIVATION FOR RESEARCH**

### **Locating Myself in the Research**

I am a 24 year old female of Ngāti Kahungunu and Rongowhakaata descent. After completing my Secondary School Education at St Josephs' Māori Girls College, Napier I moved to Hamilton for the first time in 2001 to attend the University of Waikato. As a result, I obtained a Bachelor's Degree in Social Sciences (majoring in Māori and Pacific Development and Political Science) and a Post-Graduate Diploma in Māori and Pacific Development. This thesis will contribute towards a Masters degree in Māori and Pacific Development. My supervisor, Materoa Dodd is also Māori and is a senior lecturer in the Department of Development Studies in the School of Māori and Pacific Development. My research interests include Māori health development embraced within kaupapa Māori research strategies. I believe that it is important for any research involving Māori to be done according to a Kaupapa Māori framework.

### **Motivation**

My decision to focus on this area was influenced largely by discussions made with my Aunty who is the only Māori dental therapist currently practicing in the Hamilton City region. From 2002-2004 I lived with my Aunty and her family. It was during this time that I was able to develop some sort of understanding towards the predicament that low decile schools were facing in regards to oral health. I can clearly recall many late nights and weekends spent with my Aunty talking about child oral health particularly the distinction that existed between Māori and non-Māori children and decile one and decile ten children. This often led to discussions on the origins of these inequalities and how they (if possible) could be reduced or even eliminated.

In 2005, one of the requirements for a post-graduate paper was to create a hypothetical project proposal focused on Māori development. My research proposal sought to alleviate existing child oral health inequalities in the Waikato DHB region by distributing dental health education kits to 'at risk' children. I defined 'at risk' to be 5-7 year old children who attended selected decile one schools in the Waikato DHB region. Given

that a high proportion of these children were Māori, these kits placed a strong emphasis on incorporating Māori concepts and utilising the Māori language.

As a result of this paper I consulted extensively both within the University and externally about the prospect of further researching this kaupapa at Masters level. I was pleased to have found that I had found something that I knew I would be passionate about investigating further.

## **ORGANISATION OF RESEARCH**

### **Participants**

A total of 32 participants were invited to take part in this research study. 15 children were selected from three primary schools in the Hamilton City region. As a comparative, the study selected children from two decile one schools and one decile six school. Nine children were Māori and six non-Māori. This equated to 5 children per school. From each school I invited 3 Māori and 2 non-Māori children, with the exception being School B where 5 Māori children were invited (because of the schools 100 percent Māori student roll).

In addition to the children, 15 parent/ caregivers (one caregiver/ parent for each selected child) were also invited to participate as well as two dental therapists currently working in the Hamilton City region were also invited to participate. One dental therapist was Māori and one non-Māori.

### **Selection of Participating Schools**

From the list of decile one schools I firstly chose Crawshaw School (School A) because it was the first school when the list of decile one schools were organised alphabetically. I selected Te Kura Kaupapa Māori o Te Ara Rima (School B) as it is a kura kaupapa school. Both schools were happy to participate in the research study.

The justification for the selection of a third school was more complex and time-consuming as I initially sought the participation of one decile ten school however the Principal of the selected school declined to participate.

As a replacement, a large decile nine school was selected which fortunately had a large Māori population. However, two weeks later the Principal of the school informed me the school was unable to participate as the school had been 'bogged down' already with offers to participate in other similar projects.

Given this, I needed to quickly find a replacement school, however it also required moving to a lower decile school. Glenview School (School C) was eventually selected from the list of decile six schools and approval was granted by the Principal that they would be happy to participate.

### **Selection of Participants**

Children (and subsequently their parents/ caregivers) were selected based on the school representative's recommendation.

Both dental therapists were chosen primarily because of their knowledge and experience in the research field. I initially approached Dental Therapist A to take part in this study as she is a close family member and also because she is the only Māori dental therapist currently practicing in the Hamilton City region. She recommended dental therapist B.

### **Communication with School Representatives**

My research began in mid-September after I had received approval from the School of Māori and Pacific Development Ethics Committee.

I initially sent a letter to each of the three Principal's<sup>1</sup> inviting their school to participate in my study. Each letter also contained copies of the:

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<sup>1</sup> Refer to Appendix A.

- Letter to Parents/ Caregivers<sup>2</sup>
- Participant Information Sheet<sup>3</sup>
- Oral Health Questionnaire for Parents/ Caregivers<sup>4</sup>
- Focus Group Questions for Children<sup>5</sup>
- Participant Consent Form (Parents/ Caregivers and Children).<sup>6</sup>

After letters were posted each Principal was given one week to consider the offer after which I made attempts to contact them by phone or in person. If Principals chose to accept the offer then an initial *kanohi ki te kanohi* (face-to-face) meeting was arranged with either themselves or a nominated staff representative. The purpose of this meeting was to discuss:

- the future steps involved with the research study
- the selection of participants (children and their parents/ caregivers)
- the due dates for the consent forms and research questionnaires.

School representatives were asked beforehand to bring to our meeting the names of the five children who they felt would be suitable participants for the focus group meeting. I took to each meeting five blank envelopes each containing a letter to the respective parent/ caregiver outlining the objectives of the research study.<sup>7</sup> In addition, each envelope also contained the:

- Participant Information Sheet<sup>8</sup>
- Oral Health Questionnaire for Caregivers<sup>9</sup>
- Focus Group Questions for Children<sup>10</sup>
- Participant Consent Form (Parents/ Caregivers and Children).<sup>11</sup>

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<sup>2</sup> Refer to Appendix B.

<sup>3</sup> Refer to Appendix D.

<sup>4</sup> Refer to Appendix E.

<sup>5</sup> Refer to Appendix F.

<sup>6</sup> Refer to Appendix H.

<sup>7</sup> Refer to Appendix B.

<sup>8</sup> Refer to Appendix D.

<sup>9</sup> Refer to Appendix E.

<sup>10</sup> Refer to Appendix F.

<sup>11</sup> Refer to Appendix H.

At each meeting I recorded the names of the selected children on the blank envelopes so that they could be passed on to their parents/ caregivers. The consent forms stipulated that parents/ caregivers were to be given up to three days to return consent forms however it was well known that some parents take longer i.e. two weeks. For this reason parents were given up to two weeks to return the forms after which members of staff contacted them either by phone or in person.

Finally, an appropriate time to conduct the focus group meeting was discussed and confirmed with each representative. An initial time was arranged to conduct the focus group meetings usually at least two weeks after this initial contact meeting. This gave the school representatives time to consult with their staff and their PTA (or similar Board representatives).

### **Communicating with Dental Therapists**

Establishing interview times with both dental therapists was relatively straightforward. Both dental therapists agreed to participate and both were given a letter outlining the objectives of the research study.<sup>12</sup> In addition each envelope also contained the:

- Participant Information Sheet<sup>13</sup>
- Participant Consent Form (Dental Therapists)<sup>14</sup>
- Interview Questions for Dental Therapists.<sup>15</sup>

Both dental therapists promptly responded and a convenient time and place to conduct the interviews was arranged.

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<sup>12</sup> Refer to Appendix C.

<sup>13</sup> Refer to Appendix D.

<sup>14</sup> Refer to Appendix I.

<sup>15</sup> Refer to Appendix G.

## **CONDUCTING THE RESEARCH**

### **Facilitators (Primary and Secondary)**

Because of the age of the group as well as my inexperience in interviewing children I found it critical to have another facilitator assist me with the focus group meetings.

The role of primary facilitator was to ask the children the questions (as per the interview sheet) whereas the role of the secondary facilitator was to help manage the children, ask further questions when needed and check the dictaphone regularly. I played the role of the primary facilitator at School A and C focus group meetings however because of my inability to fully converse in te reo Māori I played the role of the secondary supervisor at the School B focus group meeting.

I had two facilitators assist me with my research. My friend Era helped me with School B and my sister Petra helped me with Schools A and B. Era has had considerable experience working with children at various kohanga reo in the Hamilton region. She also worked briefly as a Nanny in Wellington. She is from Ngā Puhi and is a native speaker. Petra has also had considerable experience working with children. In the past she has worked as a volunteer teacher aid for a Pippins club in Napier. She has also worked as an English teacher at a local primary school in Brazil. She is currently in her second year at Waikato University studying towards a Bachelor of Management Studies majoring in Economics and Psychology.

### **Focus Group Meetings**

Each focus group meeting took place in a vacant room at each school and took between 35 to 45 minutes to complete. All meetings were tape recorded and were facilitated by myself, and either Petra (for Schools A and C) or Era (for School B).

Children were asked a wide variety of open-ended and closed questions concerning the types of food they usually eat or like to eat at snack and meal times. Children were also asked questions about their school dental clinic, toothbrushing and oral health and



nutrition in general. Children were encouraged to respond in either Māori or English however only the participants attending School B chose to speak Māori.

All focus group meetings contained at least two children whereas one school contained the maximum number of five children. I purposely implemented a five person per meeting limit to ensure that all children's responses could be heard and that they would not feel shy in responding. This was also a sufficient size for me to control given that I have never researched children before.

I began each focus group meeting by introducing myself, my research purpose and objectives. Children were also told:

- that the meeting was going to be tape recorded to help with the transcription process
- that their consent was gained from their parents and school principal
- that they would receive a small present at the end for taking part in the meeting.

All participants (including the facilitators) were required to wear name tags and introduce themselves to the group.

### **Written Questionnaires**

Although questionnaires took just 20 minutes to complete, parents/ caregivers were given up to one week to place completed questionnaires in the marked envelopes and return them to their child's school office. This allowed the parents/ caregivers to complete it in their own time (unlike the focus group meetings for example where children had to be present at school on the day in order to participate).

The questionnaire contained 28 open and closed questionnaires. Parents/ caregivers were free to consult with friends and whānau if needed.

The questionnaire was broken into the following parts:

- *Part One: The Oral Health of Your Child*  
(This section asked questions about the participant's child's eating habits, tooth-brushing and school dental service (before and at 5 years of age))
- *Part Two: Your Own Oral Health*  
(This section asked the participant to evaluate his/ her own oral health, their utilisation of oral health services and nutrition).
- *Part Three: General Information*  
(This section requested general information about the participant's sex, ethnicity, age bracket, highest qualification, household income before tax and whether the participant was a smoker or non-smoker).<sup>16</sup>

### **Semi-Structured Interviews**

Both dental therapists were independently interviewed using a semi-structured interview format. Both interviews took place at their homes and at a time convenient to them both. Each interview took roughly one hour to complete. Both interviews were tape recorded.

The interview format was broken into three parts:

- *Part One: Introduction*  
(Participants were asked to specify what primary schools they work with, their location and decile ratings).
- *Part Two: Oral Health Inequalities*  
(Participants were asked about the importance of good oral health at 5 years of age, as well as identify the differences between decile one and decile ten children, Māori and non-Māori children).
- *Part Three: Improving Māori Oral Health*  
(Participants were asked to describe some oral health initiatives in the Hamilton City region that are targeted at Māori children and were asked to rate their effectiveness. Participants were also asked to describe what needs to be done

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<sup>16</sup> Refer to Appendices E.

to improve the oral health of Māori children and to outline some of the challenges that prevent these from happening).<sup>17</sup>

## **TRANSCRIBING FOCUS GROUP MEETINGS AND SEMI-STRUCTURED INTERVIEWS**

I ensured that each focus group meeting and semi-structured interview was promptly transcribed as soon as I got home after conducting each meeting and interview. I did this because my recollection of the interview itself, the participant's non-verbal reactions and voices were still fresh in my mind. I found this particularly important when transcribing the focus group meetings as the children voices tended to sound the same at this age and it was also difficult to distinguish between participants i.e. males and females.

To assist further with the transcription process I ensured that during each meeting my co-facilitator and I included their names when asking questions or responding to children's answers (verbal and non-verbal) i.e. "and what do you have [Dyennah]?" Another example of this technique can be seen as follows:

*Michelle: I like brown bread!*

*Hori: I like white bread!*

*Kirstin: You like white bread [Hori]? And you like brown bread [Michelle]?*

I also consulted extensively with my co-facilitator/s to ensure that the transcripts were true and correct.

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<sup>17</sup> Refer to Appendices G.

## **ETHICAL CONSIDERATIONS**

### **Participants Rights**

I ensured that all questions in the survey and semi-structured interviews were met with sensitivity and respect. Before any research began participants were notified of their right to:

- refuse to answer any particular question, and to withdraw from the study at any time
- ask any further questions about the study that occurs during participation.
- examine and amend the transcript of the interview
- be given access to a report of the findings from the study when it is completed and published
- determine the disposal of interview tapes, transcripts of interviews, and personal documents made available to the researcher.

Before interviews began, dental therapists and caregivers were sent a copy of the general questions that were to be asked, as well as the interview format. This was to ensure that the therapists and caregivers were relaxed and well informed about what was to be involved.

Consent was affirmed at the beginning of the research.

### **Confidentiality**

Information gathered during the research study was kept confidential at all times and no person was identified at all during the study. Furthermore, only I, my supervisor and caregivers (if they wished) were able to view any information provided by the participants which was linked to the participants' names.

The data was destroyed at the completion of the study, but any raw data on which the results of the study depend will remain in secure storage for five years, after which it will

be destroyed and will only be available for use through permission from the respective participants.

A copy of my research findings remains available to parents, schools and children.

### **‘Koha’ – Reciprocal Gift Giving**

For partaking in the research study free dental health kits were given to each child participant at the conclusion of each focus group meeting. The contents were to be of benefit to the child and his/ her parent/ caregiver. Each kit contained:

- dental health information pamphlets
- a story book (Undercover Cody and the Magical Backpack)
- one Colgate ‘Looney Tunes’ toothbrush (designed for children aged between 2-5 years);
- a 45g Colgate Total toothpaste;
- a dental health and fluoride activity book (containing colouring-in pictures, puzzles, word finds)
- an Undercover Cody Sticker;
- a ‘BikeWise’ balloon.

In addition, dental health related posters were given to the participating schools.

Both dental therapists were given a box of Cadbury’s chocolates.

## CHAPTER FOUR: FINDINGS

The purpose of this chapter is twofold: *firstly*, to present and analyse the findings of the focus group meetings, written questionnaires and semi-structured interviews and *secondly*, to provide an explanation of the significance of this study in a broad sense by assessing the limitations of the study and its applicability to further research.

Research officially commenced in mid-September 2006 (following approval from the School of Māori and Pacific Development Ethics Committee) and was not completed until mid-November 2006. The research study itself comprised of focus group meetings, written questionnaires and semi-structured interviews. 32 participants were selected to take part in the study however for several reasons only 25 participated in the study.

### **FOCUS GROUP MEETINGS**

#### **Background of Participants**

A total of 11 children participated in the focus group meetings. School A had all five children take part, School B had two children and School C had four children. In total, seven participants were Māori and four were non-Māori, and of those four children were male and seven were female.

For privacy reasons child participants were given fictional names. Māori children were given Māori names, and non-Māori children were given English names. The names of the children (and their respective schools) have been listed as follows:

### School A

- Mei, Dyennah, Pete, Tahu, Waipaina;

### School B

- Aroha, Hemi,

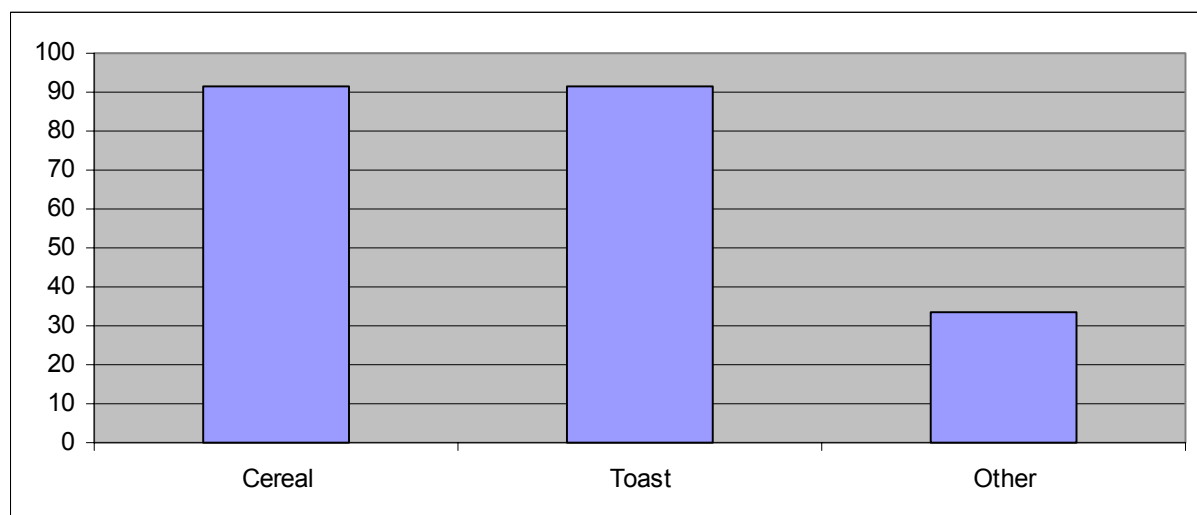
### School C

- Hori, Anahera, Dianne, Michelle.

## **Breakfast**

All children indicated that they usually have breakfast each morning. 91.7% of children said that they normally have cereal and/ or toast. Whereas only 33.4% said that they have 'other' foods for breakfast.

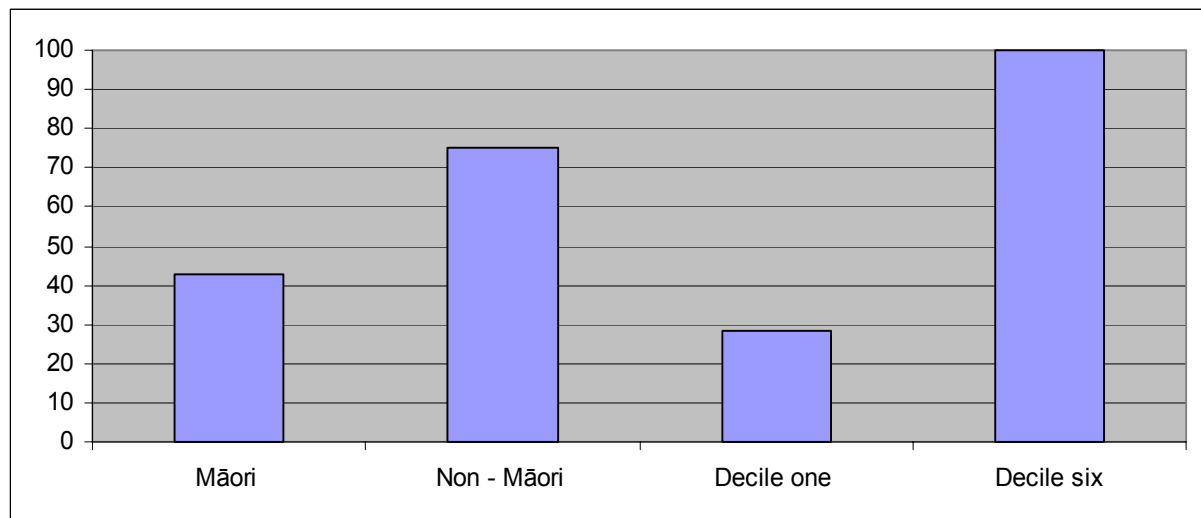
**Figure 3.01 Types of foods 5-year-olds normally consume at breakfast time (%)**



### **1. Cereals**

91.7% of children stated that they usually have cereal for breakfast. Only one non-Māori child from School A said that he does not normally have cereal/s. Children mentioned eight different varieties of cereals. The most popular cereal mentioned by far was weet-bix. This was represented highest among non-Māori children (75%) compared to Māori children (42.9%). Further, all decile six children said that they normally have weet-bix compared to just 28.6% of decile one children.

**Figure 3.02 Breakdown of 5-year-olds who normally eat Weet-bix (%)**



## **2. Toast**

91.7% of children said that they normally have toast for breakfast. Only one Māori child from one of the decile one schools said that he does not normally have toast for breakfast.

For those children who commented all Māori and decile one children said they prefer to eat toast made from white bread (as opposed to brown bread i.e. wholegrain or mixed-grain). One non-Māori child from the decile six school said that she prefers white *and* brown bread.

Children indicated seven spreads or toppings that they normally have on their toast: butter, marmite, peanut butter, spaghetti, strawberry jam, tomato sauce and vegemite.

## **3. Other**

80% of all Māori children in both decile one schools responded to the question “*what other types of food do you normally eat for breakfast?*” A wide variety of foods (healthy and unhealthy) were suggested such as ice cream, ice blocks and chocolate as well as yoghurts, muffins, oranges, bananas and apples.



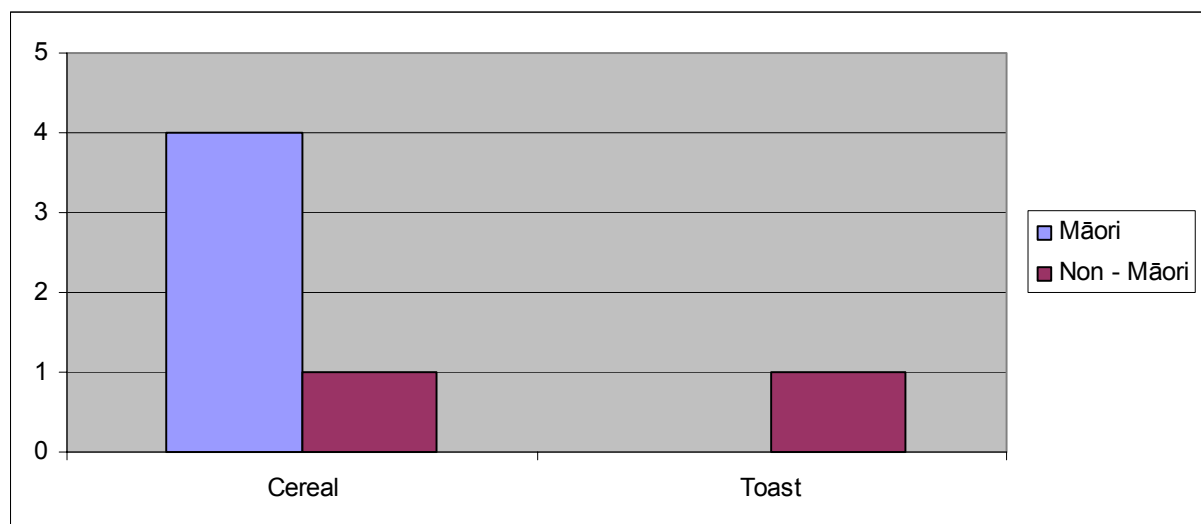
### **Drink**

In addition to food children were also asked “*what type of drink do you normally have with your breakfast?*” Only the children from the Schools A and B responded to this question. Four types of drinks were suggested: juice, milk, milo and water. One Māori and two non-Māori children said they preferred milo and two Māori children said they preferred milk. Both children (one-Māori and one non-Māori) who said that they normally drink water also said that they normally drink juice.

### **Favourites**

Only children from Schools B and C responded to the question “*what is your most favourite thing for breakfast?*” 5 children (83.3%) said that their favourite breakfast food was cereal. Whereas one non - Māori child (16.7%) from School C said that her favourite breakfast food was toast. Furthermore, all 4 Māori children said that their favourite food was cereal (either weet-bix or nutrigrain). One non-Māori child also favoured cereal (ricies) while the other non-Māori child said toast (marmite).

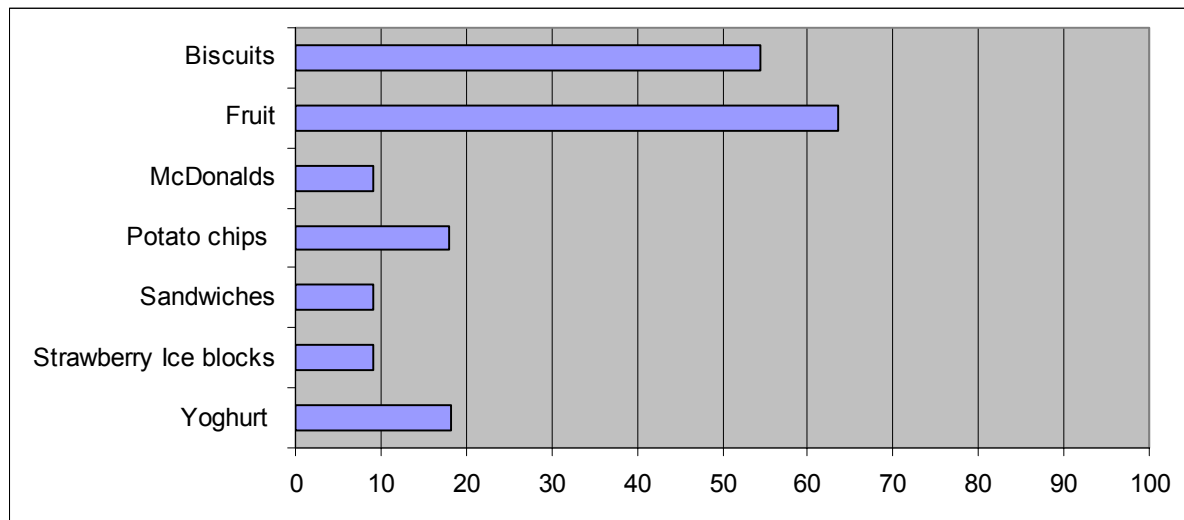
**Figure 3.03 Favourite breakfast foods of 5-year-olds**



## Morning Tea

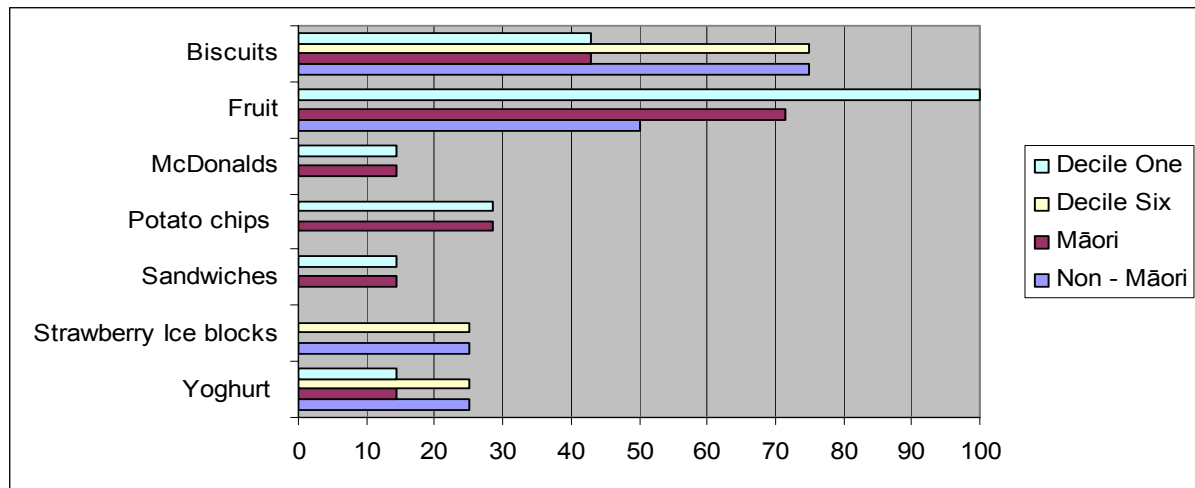
Overall, children said that the most preferred food for morning tea was fruit (63.6%) followed by biscuits (54.5%), potato chips (18.1%), yoghurt (18.2%), McDonalds (9%), sandwiches (9%) and strawberry ice blocks (9%).

**Figure 3.04 Types of food 5-year-olds normally consume at morning tea (%)**



More specifically, Māori and decile one children were more likely than non-Māori and decile six children to eat McDonalds, potato chips and sandwiches. In addition, all decile one children said that they normally eat fruit although none of the decile six children said that they normally have fruit. Furthermore, non-Māori and decile six children were more likely than Māori and decile one children to eat biscuits, strawberry ice blocks and yoghurt.

**Figure 3.05 Types of foods 5-year-olds normally consume at morning tea  
(according to ethnicity and decile of respondents) (%)**



## Lunch

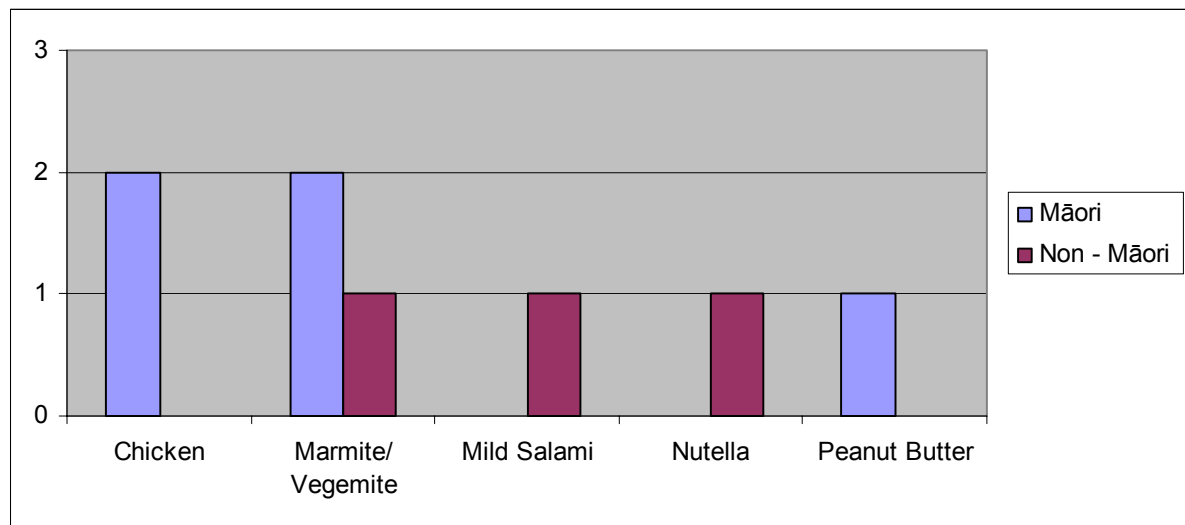
### ***Sandwiches***

All children stated that they normally have sandwiches for lunch. However one non-Māori child from School A said that she will only eat them if her Mum cuts the crusts off.

62.5% of children said that they preferred spreads (marmite/ vegemite, nutella, peanut butter). In contrast, 37.5% said that they favoured fillings (chicken, mild salami).

Māori children were more likely than non-Māori children to eat marmite/ vegemite, chicken and peanut butter sandwiches. In contrast non-Māori children were more likely to eat marmite/ vegemite, nutella and mild salami sandwiches.

**Figure 3.06 Types of sandwiches 5-year-olds normally consume at lunch time**



Furthermore, 80% of children from School A stated that they preferred sandwiches made from white bread (as opposed to brown bread). Only one Māori child from this school said that she preferred brown bread.

### ***Other foods***

Four children from Schools A and B responded to the question “*what else do you normally have for lunch?*” All four children said that they normally have oranges. 3 children also said bananas. Other responses included apples, potato chips and 2-minute noodles.

### ***Favourite foods***

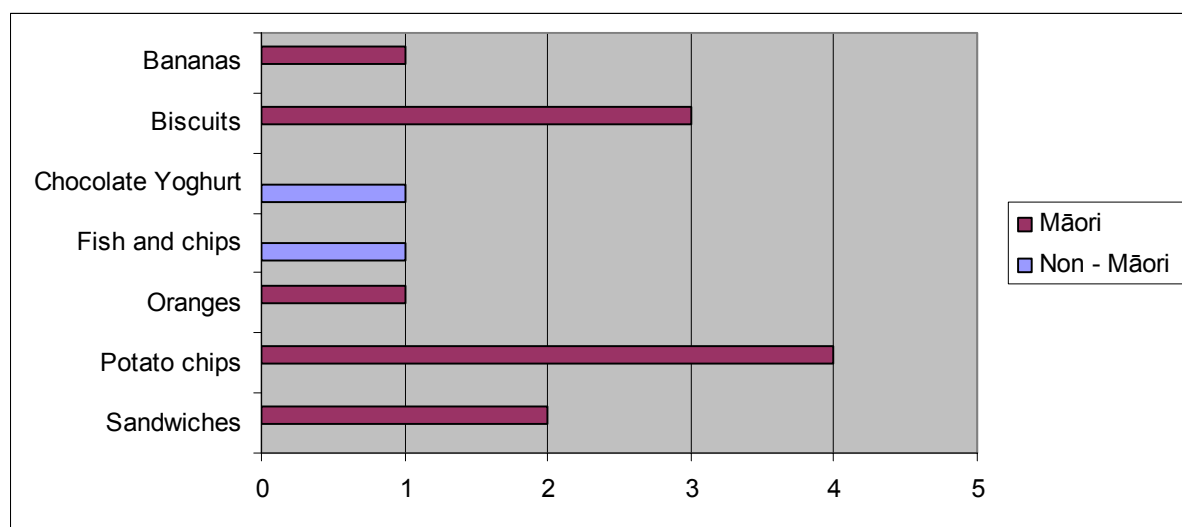
Children indicated seven favourite foods they like to eat at lunchtime:

- biscuits
- bananas
- fish and chips
- oranges
- potato chips
- sandwiches
- chocolate yoghurt.

Overall, the most favoured foods were potato chips (34%) and biscuits (26%).

The majority of Māori children said that their favourite lunch foods were potato chips (57.1%) and biscuits (42.9%). Only 50% of non-Māori children responded to this question – one child said fish and chips and the other said chocolate yoghurt. No comparisons between decile one and six children could be made as three out of four children from School C did not comment to this question however the most popular food among decile one children were potato chips (57.1%).

**Figure 3.07 Favourite lunch foods of 5-year-olds**



### ***Least favourite foods***

Children indicated a wide variety of foods that they did not like:

- potato chips
- apples
- oranges
- hot salami
- hot drink
- ham

All children from School C said that if you do not like your lunch you are not allowed to swap it or throw it out because “you’ll get our germs” and “you’ll get sick”.

### ***Forgetting to bring lunch to school***

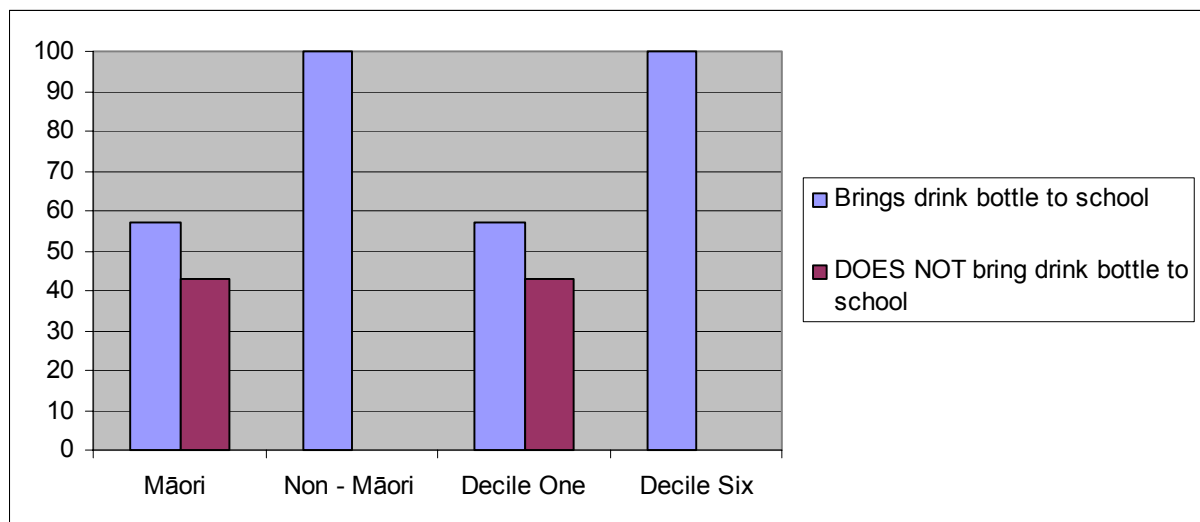
All children from Schools A and B said they always remember to bring their lunch to school however two Māori children from School C said that they have forgotten to bring their lunch to school before. Anahera said that if she has forgotten her lunch she usually just has a drink or sits down.

### ***Drink***

72.7% of children said that they bring a drink bottle to school.

More specifically, all non-Māori and children from School C said that they normally bring a drink bottle to school. However, only 57.1% of Māori and decile one children said that they normally bring a drink bottle to school.

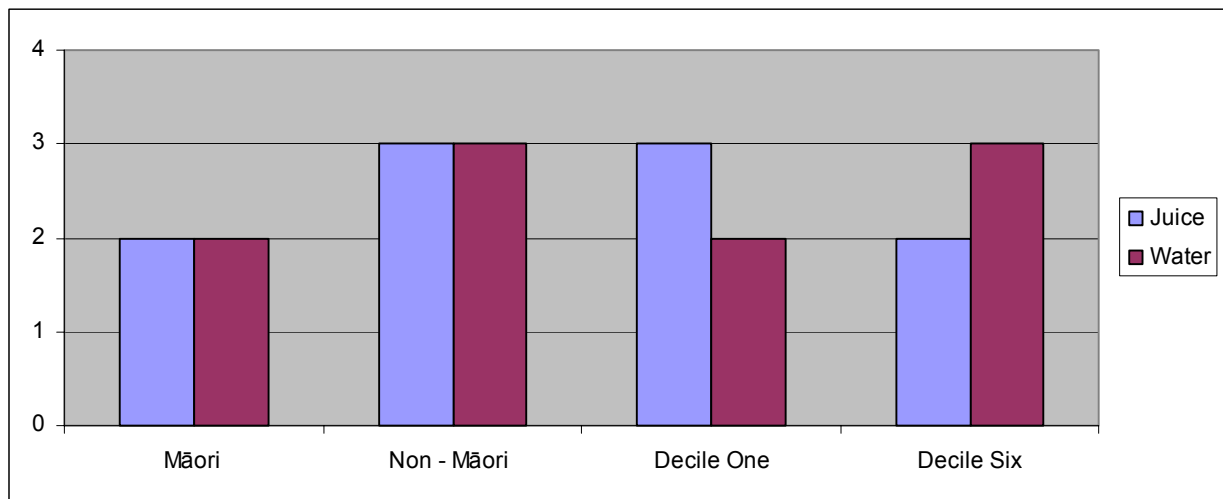
**Figure 3.08 Breakdown of 5-year-olds who bring drink and do not bring drink bottles to school (%)**



45.5% of those children who said that they bring their own drink bottle to school said that their bottle normally contains water whereas 54.5% said that it contains juice (i.e. cordial, fruit juice).

The same proportion of Māori and non-Māori children drank water as they did juice. Decile one children however normally drank more juice and less water than decile six children.

**Figure 3.09 Types of drinks 5-year-olds normally have in their drink bottles**



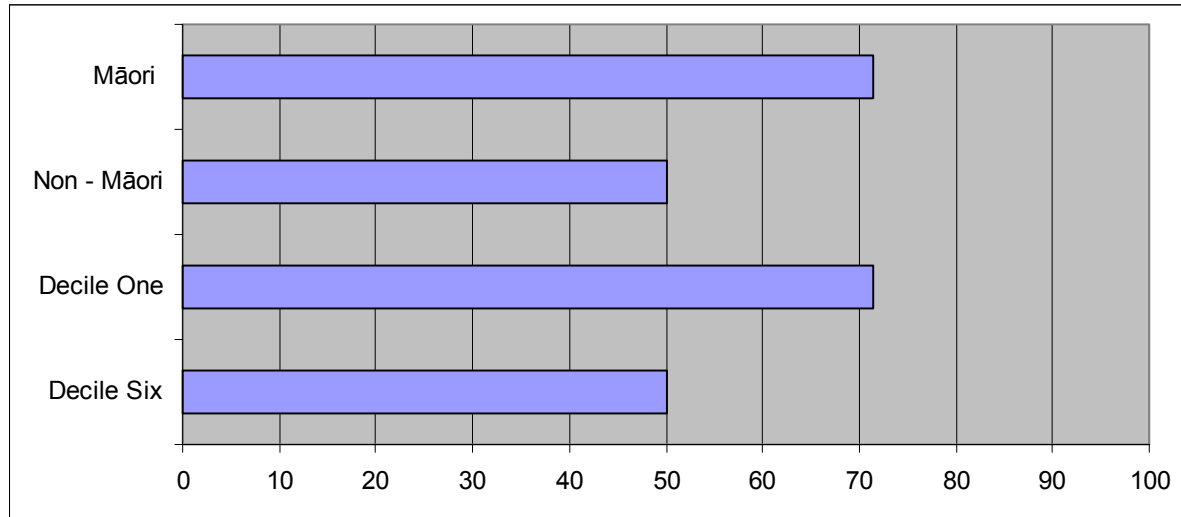
In addition to utilising drink bottles, all children said that they knew where their school water fountains were located and accessed them when needed.

### **School Canteen**

All children knew where the school canteen was located, how it operated and what types of food you could buy. In total 64% of children said they have purchased something from the school canteen before.

More specifically, Māori and decile one children were more likely to have purchased something from their school canteen before than non-Māori and decile six children (71.4% compared to 50%).

**Figure 3.10 Breakdown of 5-year-olds who have purchased food from their school canteen before (%)**



The frequency in which the children buy lunch varied significantly. Anahera said that she buys her lunch “sometimes”. Hori said that he buys his lunch every Friday. Aroha said that she purchases food from the school canteen three days a week.

## **Afternoon/ Evening Snacks**

### ***Favourite snack***

40% of respondents said that their most preferred snack after school were lollies and potato chips followed by biscuits (20%), crackers (10%), Le Snacks (10%) and ice cream on a cone(10%).

75% of decile six children said that they normally snack on potato chips whereas this number was significantly smaller among decile one children (14.3%). In contrast, the most preferred afternoon snack for decile one children was lollies (57.1%) however none of the decile six children said that they normally snack on lollies.

The most popular afternoon snack for Māori children was spicy potato chips (42.9%) and lollies (42.9%). No consensus could be drawn from non-Māori children.



### **Drink**

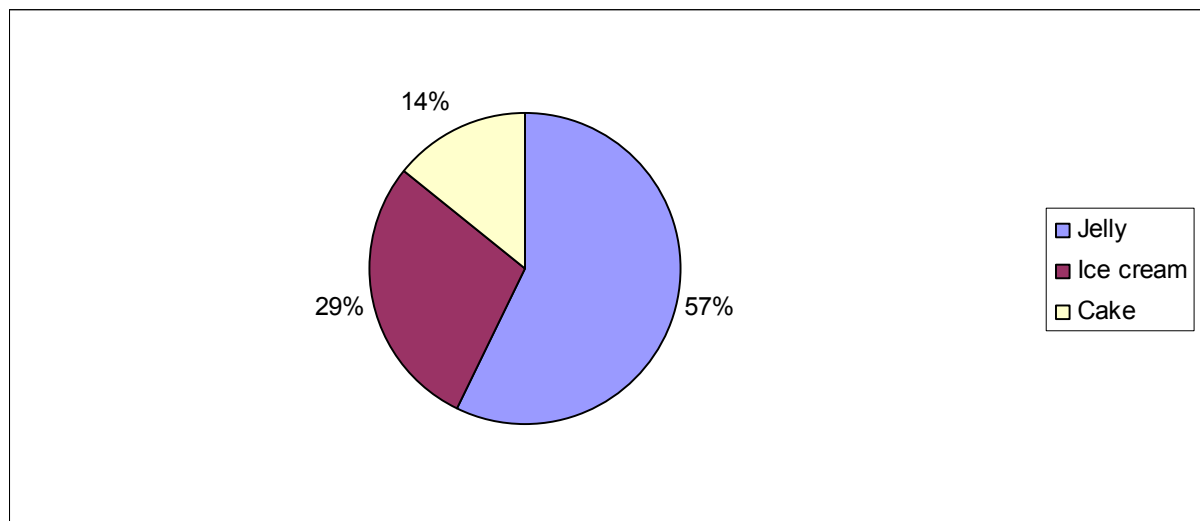
Only children from Schools B and C commented to the question “*what type of drink do you normally drink after school?*” Five children said that they normally drink fizzy drink and 2 children said that they normally drink chocolate flavoured milk. All of the Māori children said that they usually drink fizzy drink compared to just 50% of the non-Māori children. In addition, 25% of the Māori children said that they normally drink chocolate milk compared to 50% of the non-Māori children.

### **Dessert**

Most of the children from Schools A and B said they normally do not have anything to eat or drink before they go to sleep. If they do it is not regular.

Those children who did not comment on what they usually have for dessert were from School A. 57.1% said they normally have jelly, 28.6% said that they have ice cream and 14.3% that they usually have cake.

**Figure 3.11 Children’s preference for dessert**



### ***Favourite food/s***

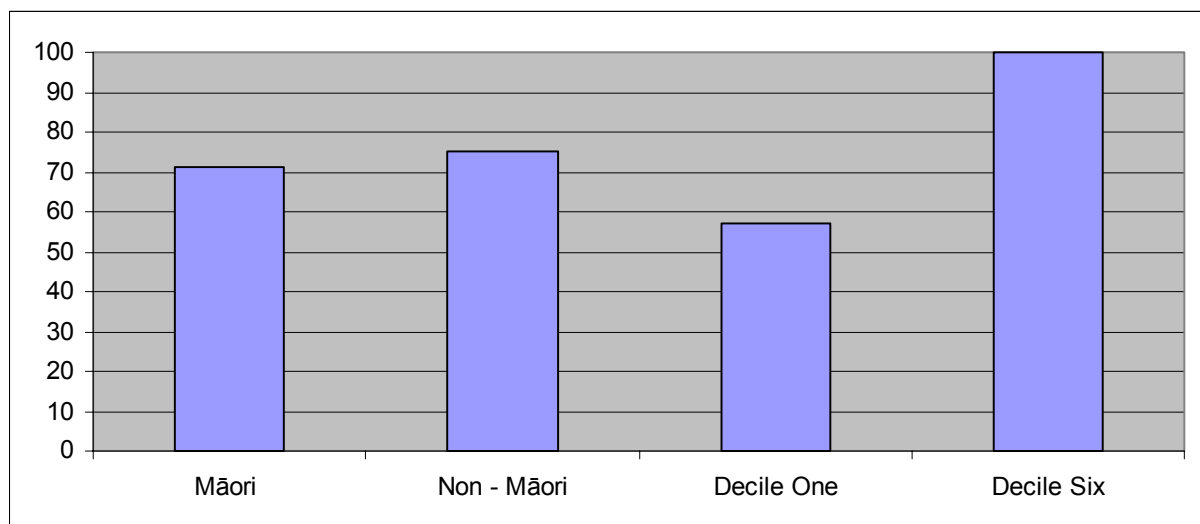
Children indicated a wide variety of favourite foods:

- biscuits
- porridge
- chippies
- ice cream
- rices
- bananas and yoghurt
- cheeseburger HappyMeals from McDonalds
- “those yellow things ... in the packet” from McDonalds breakfast.

### ***Fruit***

72.7% of children said that they like fruit. This was represented highest among non-Māori and decile six children. 75% of non-Māori children said that they like fruit compared to 71.4% of Māori. Further, all decile six children said that they like fruit compared to just 57.1% of all decile one children.

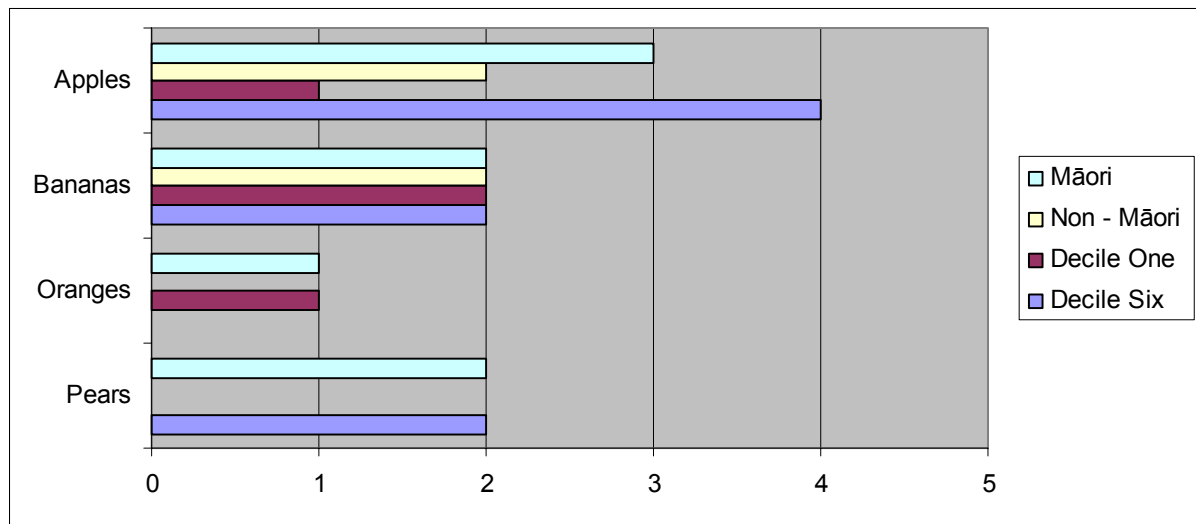
**Figure 3.12 Breakdown of 5-year-olds who like fruit (%)**



The most popular fruit (as indicated by 50% of children at School A and all of the children from School C) were apples, bananas, oranges and pears. All children from

School C said that their favourite fruit were apples whereas both children from School A favoured bananas. All Māori children said that they liked apples whereas 66.7% of non-Māori children who responded said that they like apples and also bananas.

**Figure 3.13 Favourite fruits of 5-year-olds**



Only two children from School C identified fruit which they did not like fruit. Anahera said that she did not like green pears. Dianne said that she did not like green pears.

### **Lollies**

91.7% of all children said that they like lollies. One Māori child from School A said that she does not like lollies.

In total, children identified eight different lollies that they said were their favourite/s:

- biscuits
- bubble gum
- chocolate
- fruit rigs
- jellybeans
- jet planes
- shaped lollies

- strawberry lollies

The most favoured lolly was jellybeans (36.4%).

Five children (one from School B and four from School C) identified lollies that they did not like. These were:

- jellybeans
- jet planes
- jelly babies
- pebbles
- spicy lollies

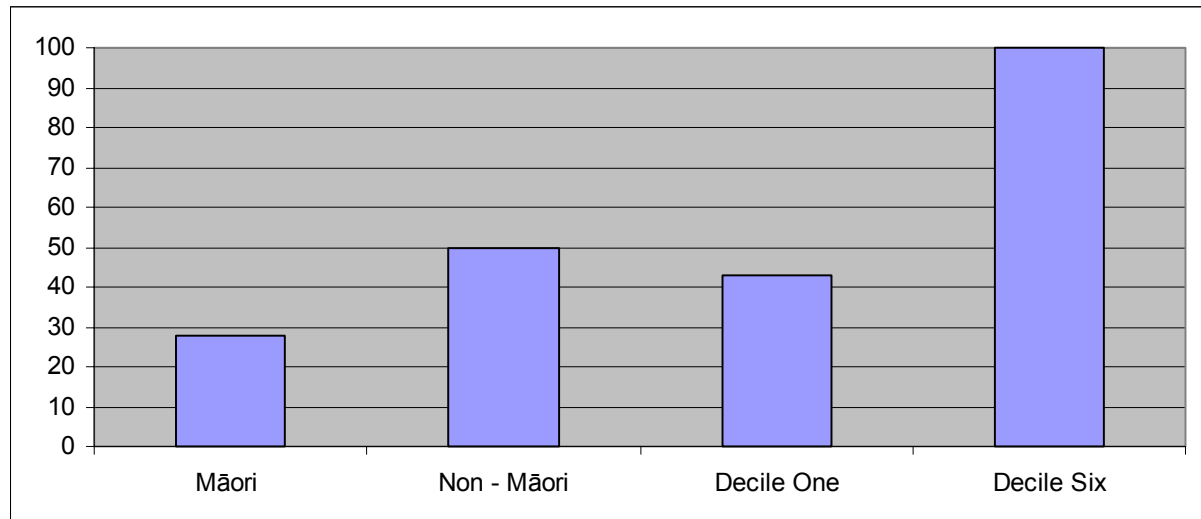
### **School Dental Clinic**

81.8% of children said that they knew where their school dental clinic was located.

Those children who did not know were Māori and from the decile one schools.

64% of children said that they have been to the dental clinic before. This included all children from Schools B and C. Only 20% of children from School A said they had been to the school dental clinic before. Overall, all decile six children said they had been while just 42.9% of decile one children had been. Furthermore, more non-Māori children (50%) had been than Māori children (28.6%). Some children said they had been more than once. Hori for example said that he has been twice. Michelle said that she has been five times.

**Figure 3.14 Breakdown of 5-year-olds who have been to the School Dental Clinic before (%)**



According to Mei and Waipaina you are allowed to bring other family members with you to the dental clinic (such as parents, siblings, grandparents). Hemi said that he usually goes to the dental clinic by himself and not with the support of friends and whānau. Dianne said that she takes a friend with her to the dental clinic, Hori and Anahera said they go by themselves.

### ***The Dental Therapist***

Most of the children understood the role of the dental therapist. Dyennah, for example, said that “she opens your mouth”. Waipaina said that when you go there “you have to put some glasses on cos they put a light over your eye”. She said that patients receive a balloon and stickers at the end of the visit. Hori said that you have to have “the yucky thing” in your mouth. This helps to “get your germs out of the tongue”.

### **Toothbrushing**

90% of children said that they own a toothbrush. One child said that she did not own a toothbrush. She was Māori and from a decile one school.

Those children who owned a toothbrush were able to describe what their toothbrush looked like. Only one child said that she owned an electric toothbrush. She was non-Māori and from a decile six school.

All children knew how to brush their teeth and could demonstrate it successfully. Hori and Anahera said they brush their teeth themselves. Michelle said that sometimes her Mum brushes her teeth and sometimes she does it herself.

Waipaina said that you only need to apply “a little bit” of toothpaste however Pete said that you apply a lot (held his hands about one metre apart). Anahera, Dianne and Hori said they spit out their water. Michelle said that she drinks it sometimes. Hori and Anahera said their toothpaste tastes nice. Dianne said she has a “spicy peppermint one”, Anahera said that she has a bubblegum tasting one.

80% of respondents said that they brush their teeth at least once a day. 20% said that they do not brush their teeth everyday. One of the respondents was Māori and the other was non-Māori. Both children were from decile one schools.

### **Overall Findings**

Generally most children understood why we brush our teeth. Most of the children who commented said that we brush our teeth to make them clean and white. Typical answers included: “so we get the things out of our teeth”, “cos you might get holes in your teeth ... and you have to get your teeth pulled out”, “it makes your teeth white and “they might get black”.

90.9% of children were able to successfully identify healthy foods. Some responses included oranges, apples, bananas, broccoli, grapes and lettuce. The most popular responses were bananas and oranges. One child from School C said that sandwiches are healthy to which her friend added that sandwiches are “brain food”.

72.7% of children were able to successfully identify unhealthy foods. This figure indicates that children are more likely to understand what foods are healthier for us than those that are unhealthy (90.9% compared to 72.7% respectively). More types of healthy foods were mentioned than unhealthy foods (9 compared to 7 respectively). Some responses to unhealthy foods included chocolate, 2-minute noodles, lollies, ice blocks, cream and ice cream. However some children from School A said that bananas were unhealthy food. Similarly, one child from School C said that strawberries were bad. When asked, not all children from School A knew whether McDonalds was unhealthy or healthy.

## **WRITTEN QUESTIONNAIRES**

### **Background of Participants**

A total of 12 parents completed and returned their research questionnaires. School A had all five parents complete the questionnaires, School B had three parents and School C had four parents. In total, seven participants were Māori and five non-Māori. However, one non-Māori parent has a child who is part-Māori and for this study the child was classified as Māori. Furthermore, all 12 participants were female and were aged between 22 - 35 years of age.

## **PART ONE: THE ORAL HEALTH OF YOUR CHILD**

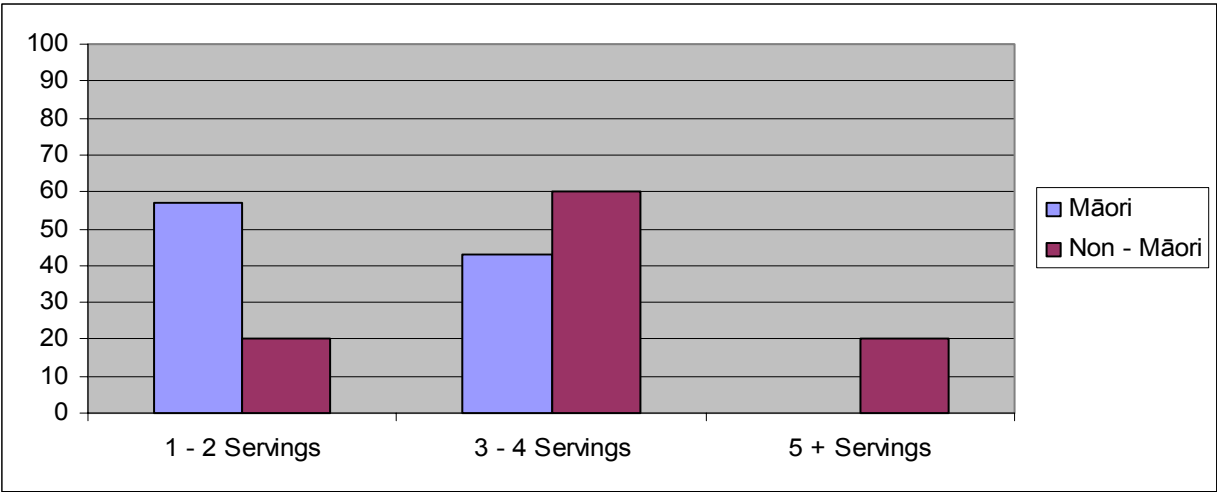
### **Eating Habits**

#### ***1. How many servings of fresh fruit and vegetables does your child eat per day?***

Overall, most children eat well below the recommended 5 + servings of fresh fruit and vegetables a day. 50% of all children eat 3-4 servings of fresh fruit and vegetables per day.

Non - Māori children generally eat healthier foods than Māori children. 60% of all non-Māori children eat 3-4 servings of fresh fruit and vegetables per day compared to 42.9% of Māori children. The majority of Māori children (57.1%) have only 1-2 servings per day. Only one parent/ caregiver said that her child eats the recommended intake of 5+ servings. She was non-Māori and her child was from a decile one school.

**Figure 3.15 Number of fresh fruit and vegetables 5-year-olds normally consume each day (%)**



**2. Does your child snack between meals?**

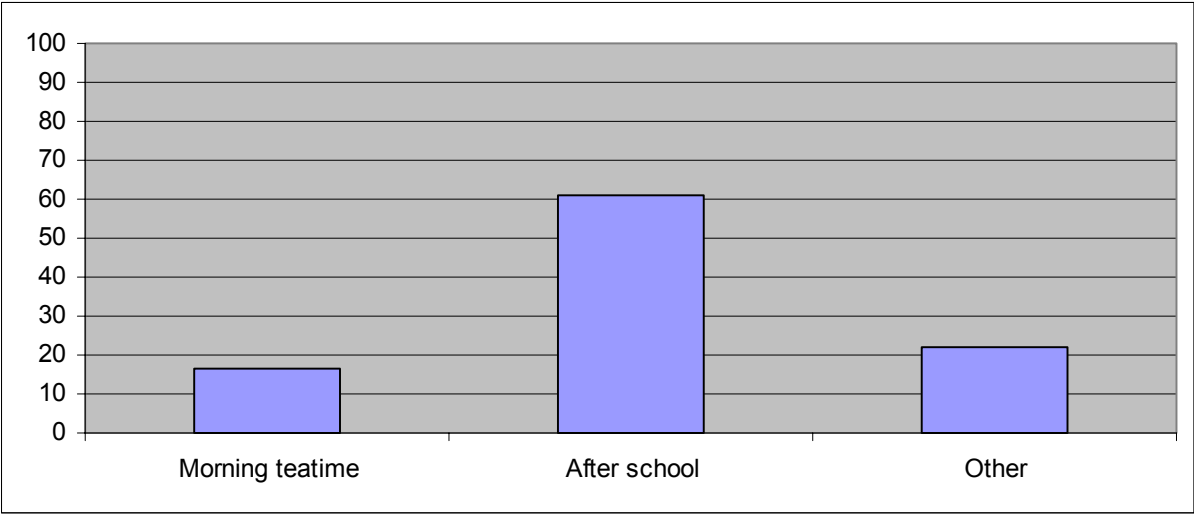
92.7% of respondents said that their child snacks between meals. One Māori respondent from a decile one school said that her child does not snack between meals.

**3. If ‘Yes’ at what time/s of the day does your child normally snack?**

The most popular time for children to snack between meals was after school (91.7%). Other times specified were morning tea, 11am on weekends and 2pm. One respondent said that it was dependant on what they were doing and when her child travels he snacks more.



**Figure 3.16 Time of day when 5-year-olds normally snack (%)**



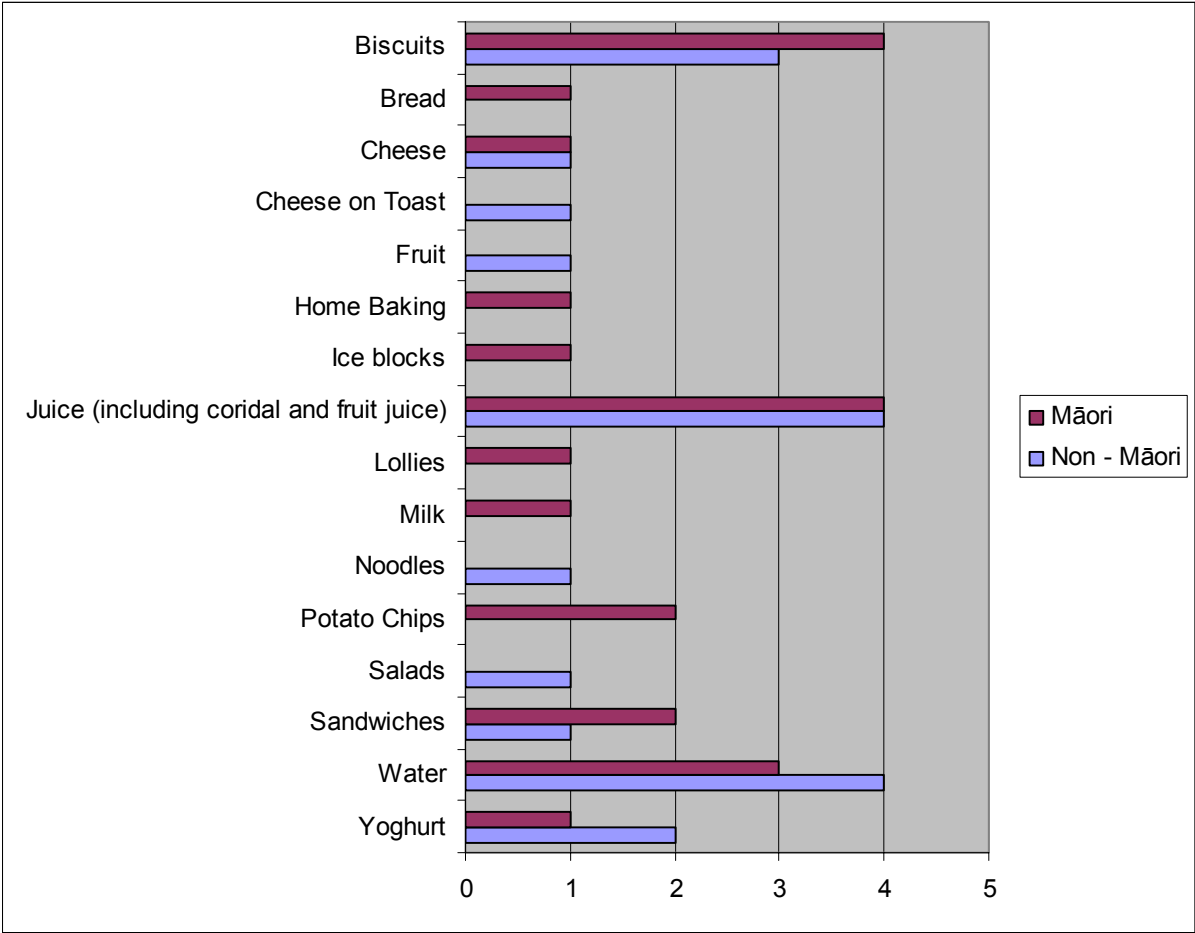
**4. *What type/s of food or drinks does your child normally snack on during these times?***

In total, respondents indicated 14 different types of foods and drinks that their child snacks on between meals.

Results indicated that overall non-Māori eat healthier foods than non-Māori. Māori children ate more lollies and potato chips than non-Māori where as non-Māori eat more fruit, milk, noodles, salads, water and yoghurt than Māori children. Nevertheless, exceptions were evident i.e. Māori ate more sandwiches and non-Māori ate more ice blocks.

For decile one children the most popular snacks were fruit, juice and water whereas for decile six children it was biscuits and fruit.

**Figure 3.17 Types of foods and drinks 5-year-olds normally snack on**

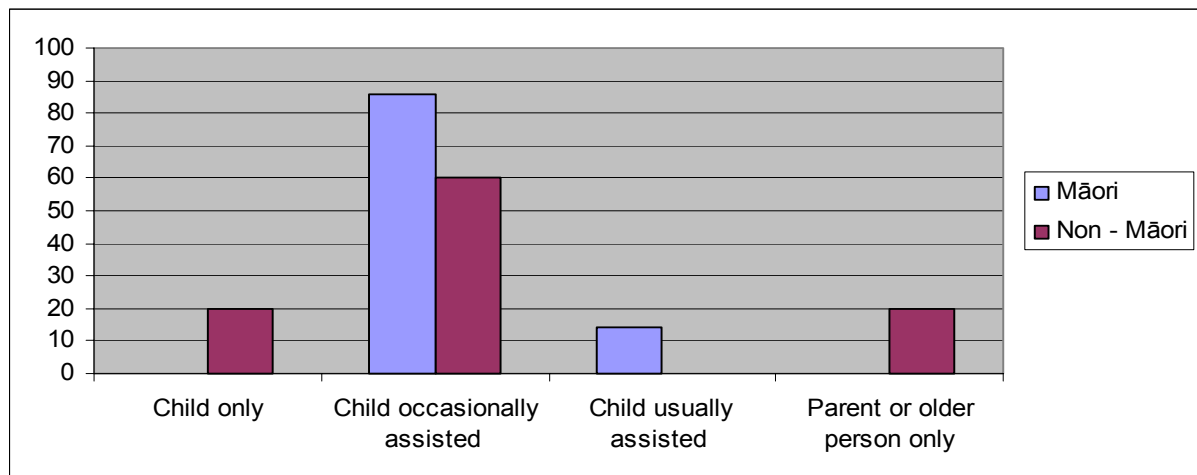


## Toothbrushing

### 5. Who brushes your child's teeth?

75% of all respondents said that their child brushes their own teeth occasionally assisted by an older person. This was represented slightly higher among Māori (66.7%) compared to non-Māori (60%). Furthermore, all decile six respondents said that their child brushes their own teeth occasionally assisted by an older person compared to only 62.5% of decile one respondents. Similarly, one non-Māori parent from one of decile one schools said she normally brushes her child's teeth.

**Figure 3.18 Degree of parental assistance in child toothbrushing (%)**

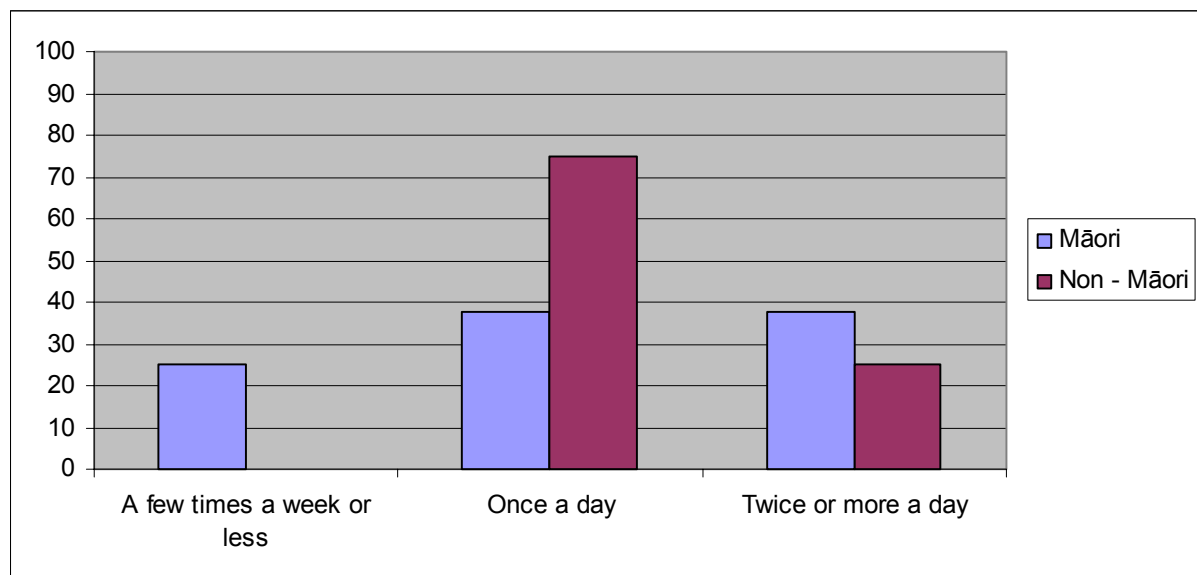


**6. *How often does your child usually brush his/ her teeth?***

50% of respondents said that their child brushes their teeth once a day. 33.3% of respondents said that their child brushes their teeth twice a day. 16.7% of respondents said that their child brushes their teeth a few times a week or less.

37.5% of Māori respondents and 75% of non-Māori respondents said that their child usually brushes their teeth once a day. 37.5 % of Māori said that their child brushes their teeth twice or more a day whereas this was only 25% for non-Māori. Those respondents who said that their child usually brushes his/ her teeth a few times a week or less were Māori and from decile one schools.

**Figure 3.19 Number of times 5-year-olds normally brush their teeth (%)**

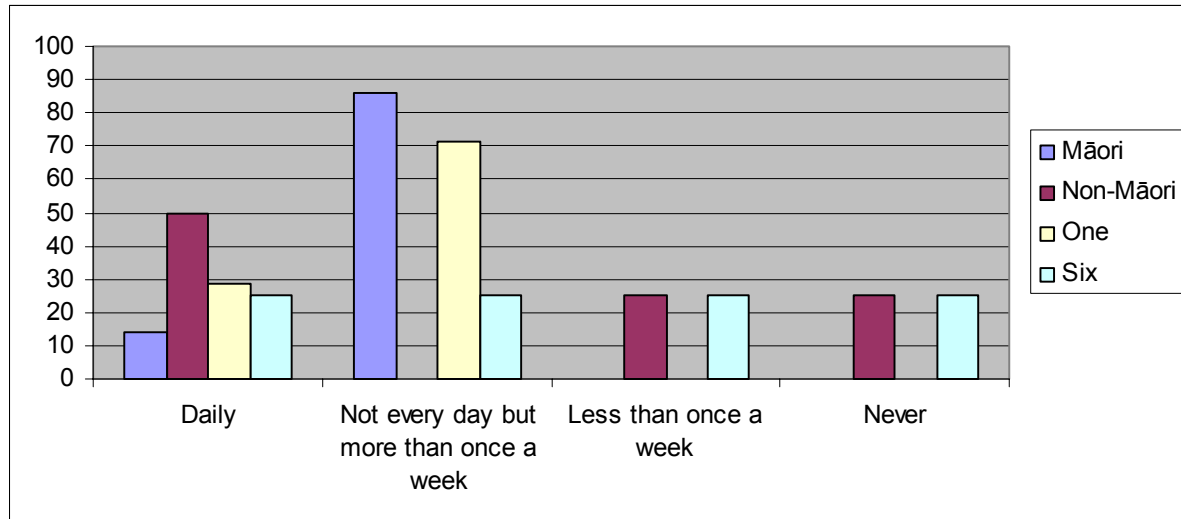


**7. *If your child brushes his/ her teeth alone, how often do you look at them to see if they have been cleaned thoroughly?***

54.5% of parents/ caregivers look “not everyday but more than once a week” to see if their child has cleaned their teeth thoroughly, 27.3% look “daily” while the remaining parents/ caregivers (18.2%) said that they look “less than once a week” or “never.” This question was not applicable to one parent/ caregiver as she normally brushes her child’s teeth. For this reason she has been excluded from this analysis.

The majority of Māori (85.7%) and decile one respondents (71.4%) said that they look “not every day but more than once a week”. The majority of non-Māori (50%) said that they look “daily”. Those who look “less than once a week” or “never” were non-Māori and from the decile six school.

**Figure 3.20 Number of times parents/ caregivers check their child's teeth to see if they have been cleaned thoroughly.**



## School Dental Service

### *Before 5 Years of Age:*

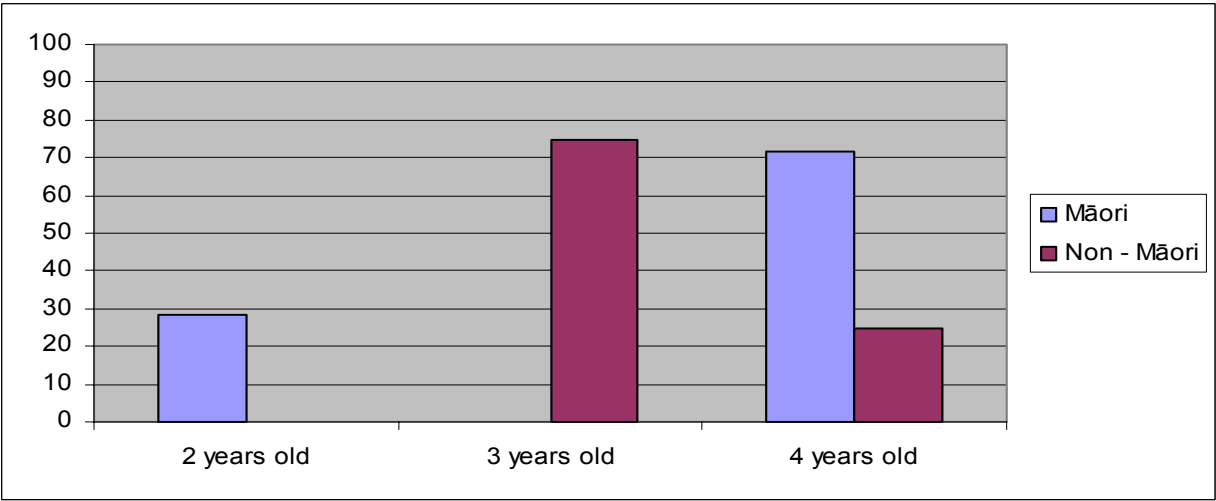
#### **8. Has your child ever attended a school dental clinic before he/ she was 5 years old?**

91.7% of all respondents said that their child had visited the dental therapist before 5 years of age. One non-Māori respondent from the decile six school said that her child has not attended a school dental clinic before he/ she was 5-years-old.

#### **9. If 'Yes' at what age was his first visit?**

The majority of respondents (54.5%) said that their child's first visit to the school dental clinic was when they were four-years-old. The majority of these respondents were from decile one schools (62.5%) and are Māori (71.4%). The majority of non-Māori respondents said that their child first attended when they were three-years-old (75%). Only 28.6% of respondents said that their child first attended when they were two-years-old, all of whom were Māori. No general consensus could be found with decile six parents.

**Figure 3.21 Age of child’s first visit to the School Dental Clinic (%)**

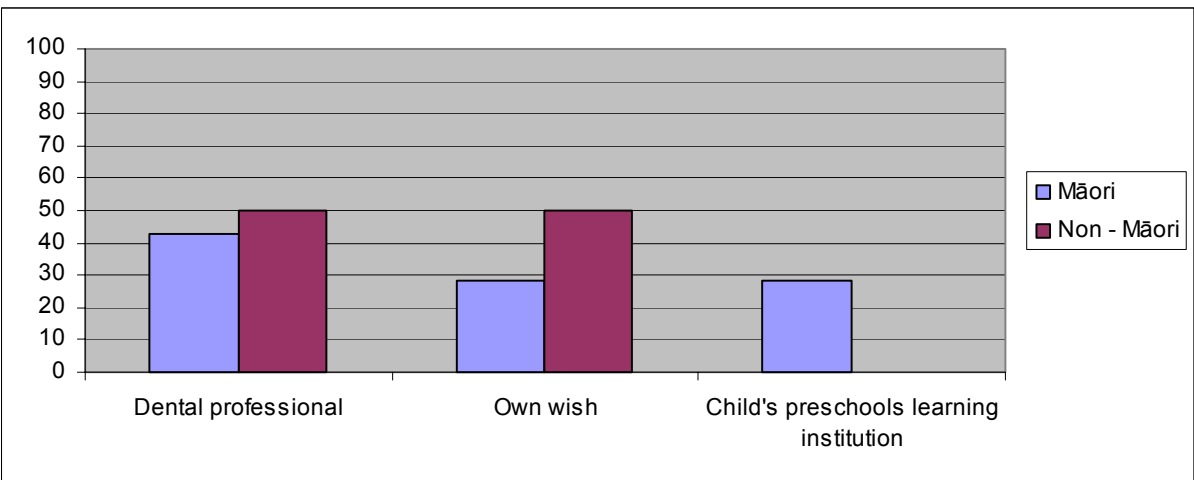


**10. On whose advice did you make the first visit?**

Respondents said they were advised by either a dental professional (45.5%), their child’s learning institution ((18.2%) or it was their own wish (36.4%).

All respondents from the decile six school said they were advised by a dental professional. The majority of all decile one respondents (50%) said that it was their own wish. Those parents who were advised by their child’s preschool learning institution (i.e. kohanga reo, kindergarten) were Māori and from the decile one schools.

**Figure 3.22 Person who advised child’s first visit to the School Dental Clinic (%)**



**11. If your child has not been to the school dental clinic, before this age is this because:**

This question was not applicable as all respondents said that their child had attended a school dental clinic before this age.

**5 Years of Age:**

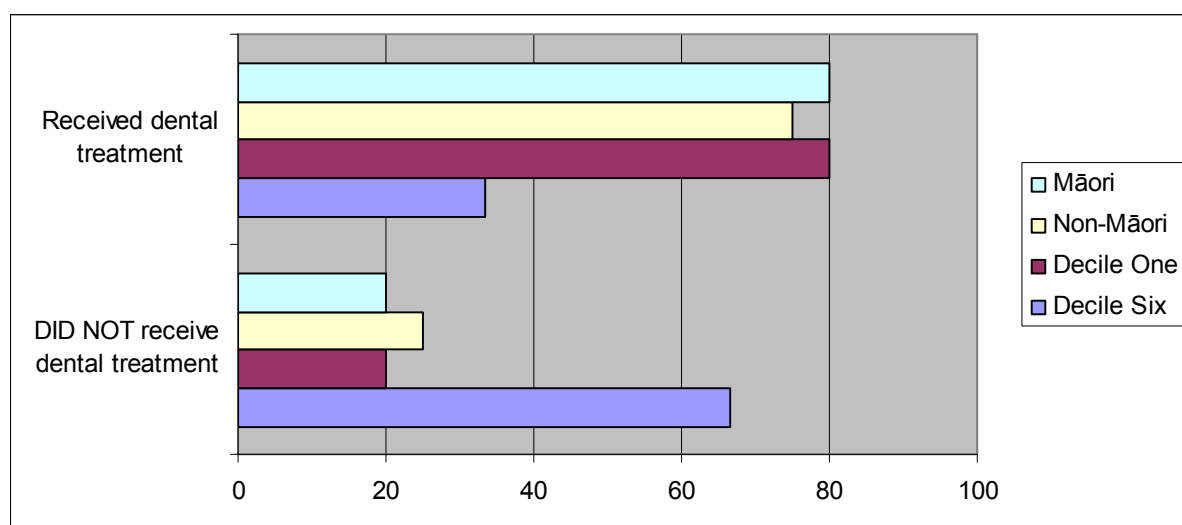
**12. Has your child attended the school dental clinic this year (2006)?**

75% of all respondents said that their child had attended the school dental clinic in 2006.

**13. If 'Yes' did your child require dental treatment? (i.e. fillings, tooth extractions etc.)**

75% of all respondents who said that their child had been to the school dental clinic this year said that their child required dental treatment as a result (i.e. fillings, tooth extractions etc.). This was slightly higher among Māori (80%) than non-Māori (75%) and also among decile one children (80%) compared to decile six children (67%).

**Figure 3.23 Number of Children who received and did not receive dental treatment in 2006 (%)**



#### **14. If 'No' what were the reasons why?**

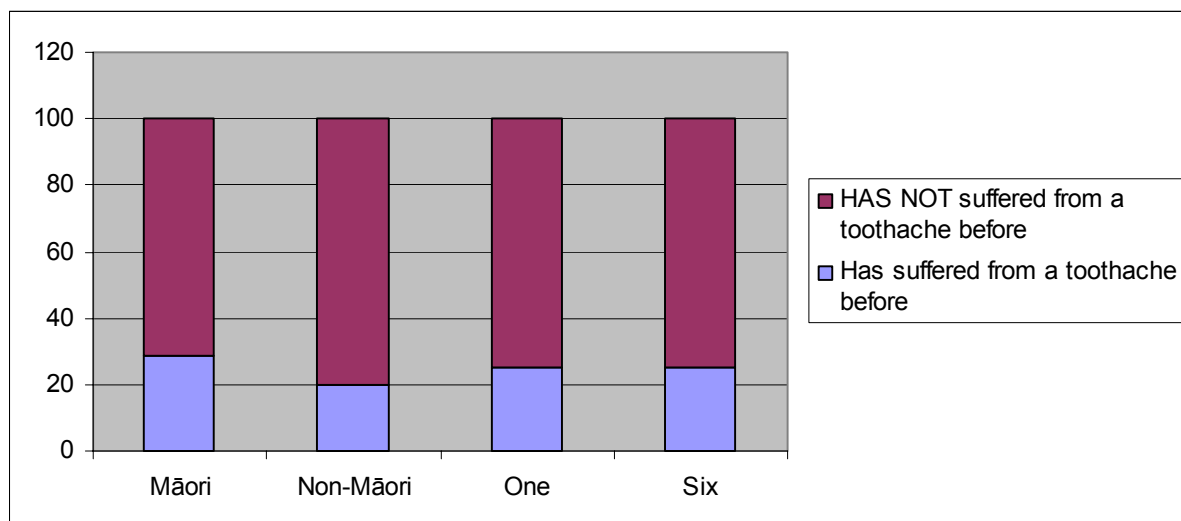
Four respondents commented to this question. Their answers included:

- it was just a check-up;
- their child had not been called up yet, and
- their child attended the school dental clinic when he/ she was four years old.

#### **15. Has your child ever suffered from a toothache?**

25% of all respondents said that their child has suffered from a toothache before. This was most common among Māori (71.4%) and children in the decile one schools (75%).

**Figure 3.24 Breakdown of 5-year-olds who have and have not suffered from a toothache before (%)**

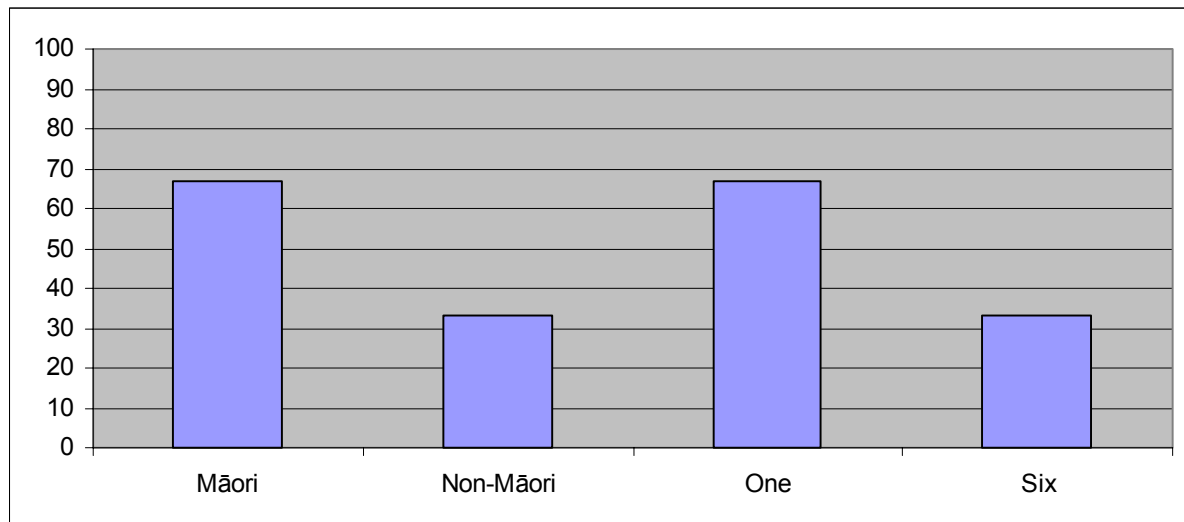


#### **16. Has your child been referred to a dentist for dental treatment?**

75% of all respondents said that their child has not been referred to a dentist for dental treatment. However, 25% parents/ caregivers said that their child has had treatment before. 66.6% of these parents were Māori and said that their child attended a decile one school.



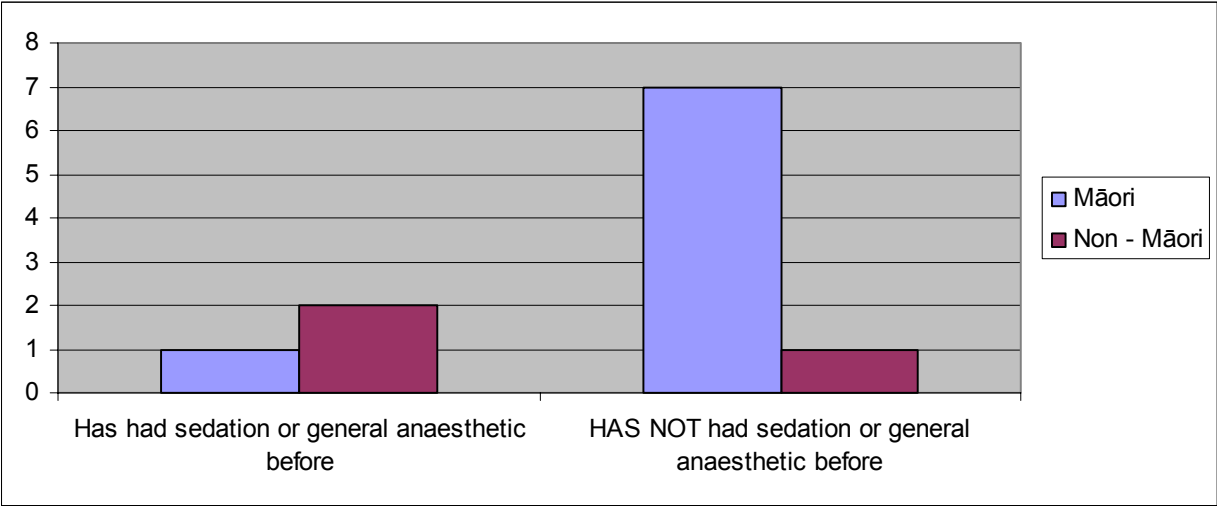
**Figure 3.25 Breakdown of 5-year-olds who have been referred to a dentist before for dental treatment (%)**



***17. Has your child ever had sedation or a general anaesthetic to have their teeth treated?***

Eight respondents (72.7%) said that their child has never had sedation or a general anaesthetic to have their teeth treated. However, three respondents (27.3%) said that their child had/ or is currently on the waiting list to have sedation or a general anaesthetic to have their teeth treated. Two were non-Māori and were from a decile one school.

**Figure 3.26 Number of 5-year-olds who have or have not had sedation or general anaesthetic before**



**18. Has your child had any teeth removed because of decay or abscesses?**  
 All parents/ caregivers said that their child had not had any teeth removed because of decay or abscesses.

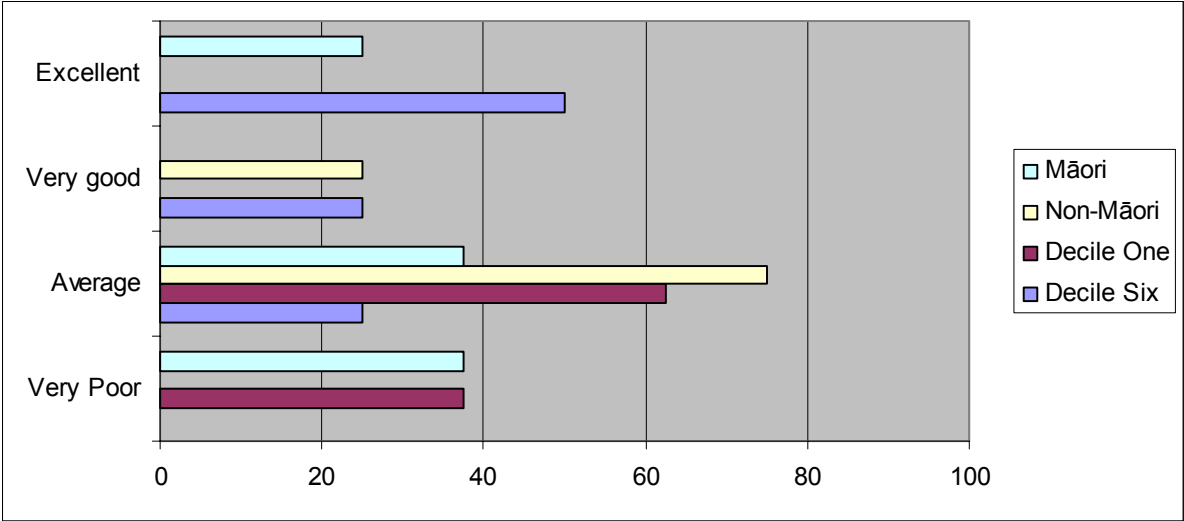
**PART TWO: YOUR OWN ORAL HEALTH**

**Individual Assessment**

**19. If you have your own natural teeth, how would you grade your teeth and gums?**  
 Responses to this question varied form “very poor” to “excellent”. 50% of all respondents described their teeth as “average”.  
  
 75% of Māori described their teeth as either “average” or “very poor” whereas all non-Māori described their teeth as either “average” or “very good”. Nevertheless, those who described their teeth as “excellent” were Māori.

Furthermore, all decile one parents described their teeth as “average” or “very poor”. All decile six parents described their teeth as “average”, “very good” or “excellent.”

**Figure 3.27 Parents/ Caregivers grading of own teeth and gums (%)**



**The Dentist**

***20. Have you visited a Dentist before?***

All parents/ caregivers said they had visited a Dentist before.

***21. If ‘No’ what was your reason for not visiting the dentist?***

This question was not applicable as all respondents said they had visited a Dentist before.

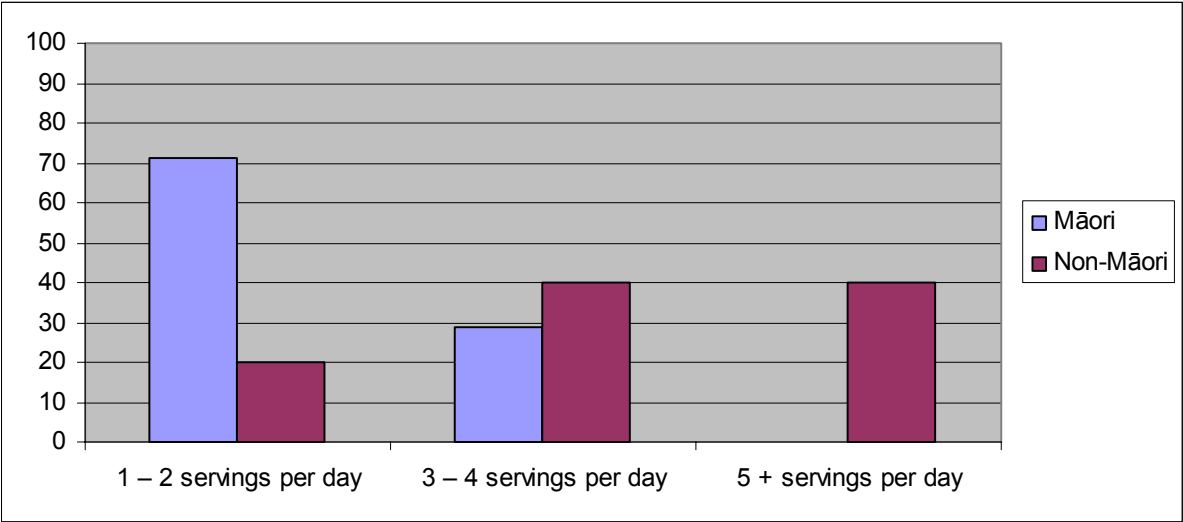
**Nutrition**

***22. On average, how many servings of fresh fruit and vegetables do you eat per day?***

50% of all respondents said that they have 1-2 servings of fresh fruit and vegetables per day, 83.3% are Māori and have children at decile one schools. 80% of all non-Māori eat

3 or more servings per day. 40% of all non-Māori respondents said that they eat the recommended 5+ servings per day. No Māori were represented at this level.

**Figure 3.28 Number of servings of fresh fruit and vegetables parents/ caregivers normally consume each day (%)**



**23. Are you: [male or female?]**

All respondents were female.

**24. Are you: [Māori or non- Māori?]**

Seven respondents (58.3%) identified as Māori and five (41.7%) identified as non-Māori.

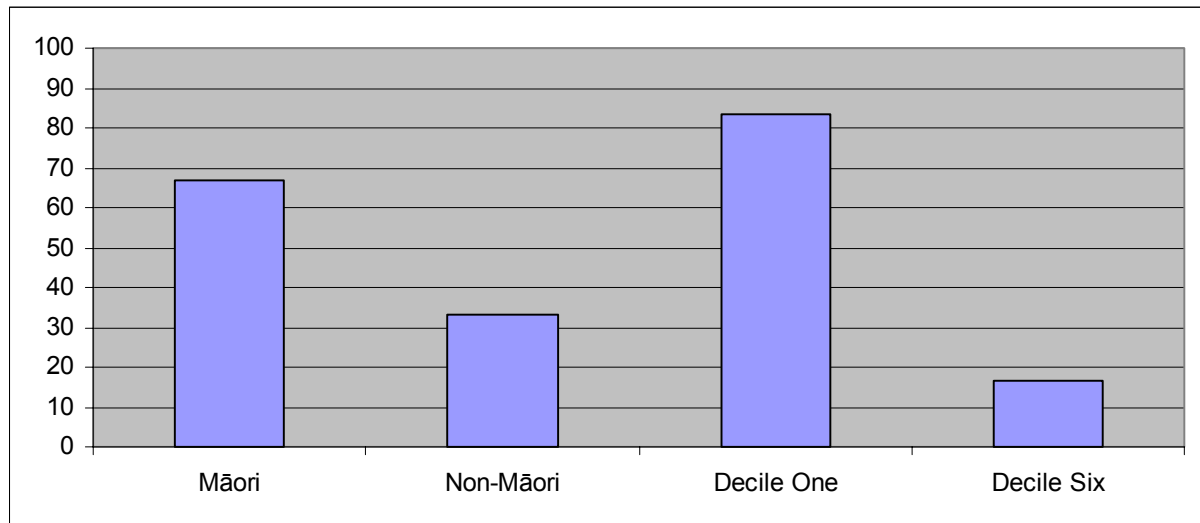
**25. Please indicate your age bracket:**

All respondents were aged between 22 – 35 years of age.

**26. Are you a: [smoker or non-smoker?]**

50% of all respondents indicated they were smokers. 66.6% of smokers were Māori. 83.3% of smokers said that their child attended a decile one school.

**Figure 3.29 Parents/ Caregivers who are Smokers (%)**



**27. What is your highest formal qualification? (Do not count incomplete qualifications or qualifications that take less than 3 months or full-time study to complete)**

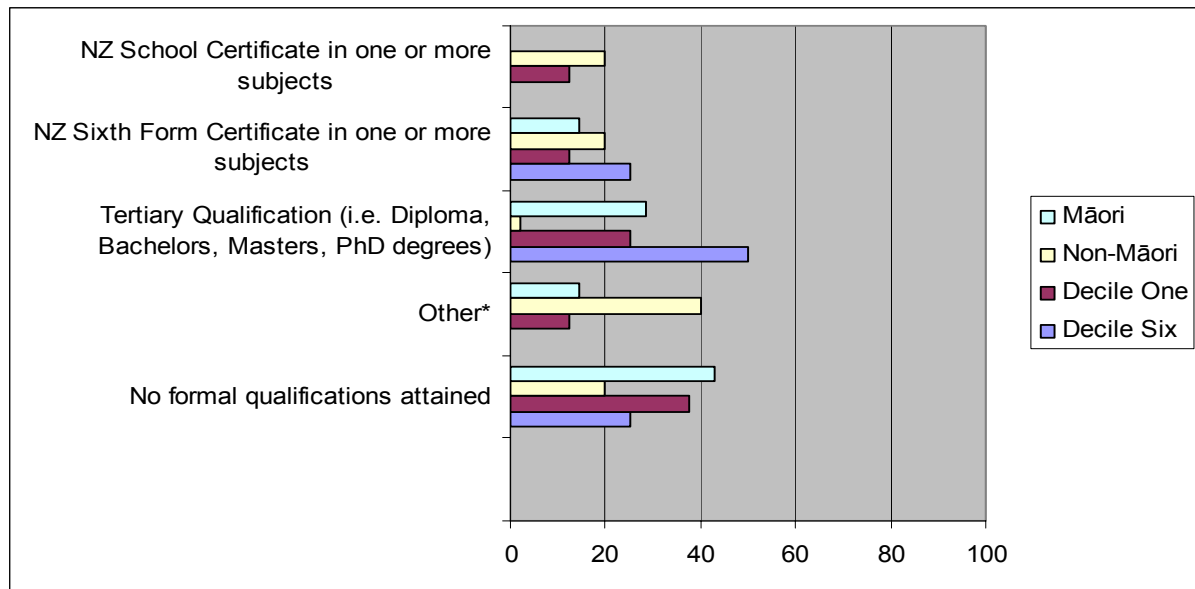
75% of respondents said that their highest qualification was one of the following:

- New Zealand School Certificate in one or more subjects (8.3%)
- New Zealand Sixth Form Certificate in one or more subjects (16.7%)
- Tertiary Qualification (i.e. Diploma, Bachelors, Masters, PhD degrees (33.3%)
- Other (8.3%).

25% of all respondents said that they had no formal qualifications. This was represented highest among Māori respondents (42.9%) compared to non-Māori (20%) and among decile one respondents (37.5%) compared to decile six parents (25%).

Moreover, 25% of all respondents said that they had a tertiary qualification. This was represented highest among non-Māori respondents (40%) compared to Māori (28.6%) and decile six respondents (50%) compared to decile one respondents (25%).

**Figure 3.30 Highest Formal Qualification of Parents/ Caregivers**

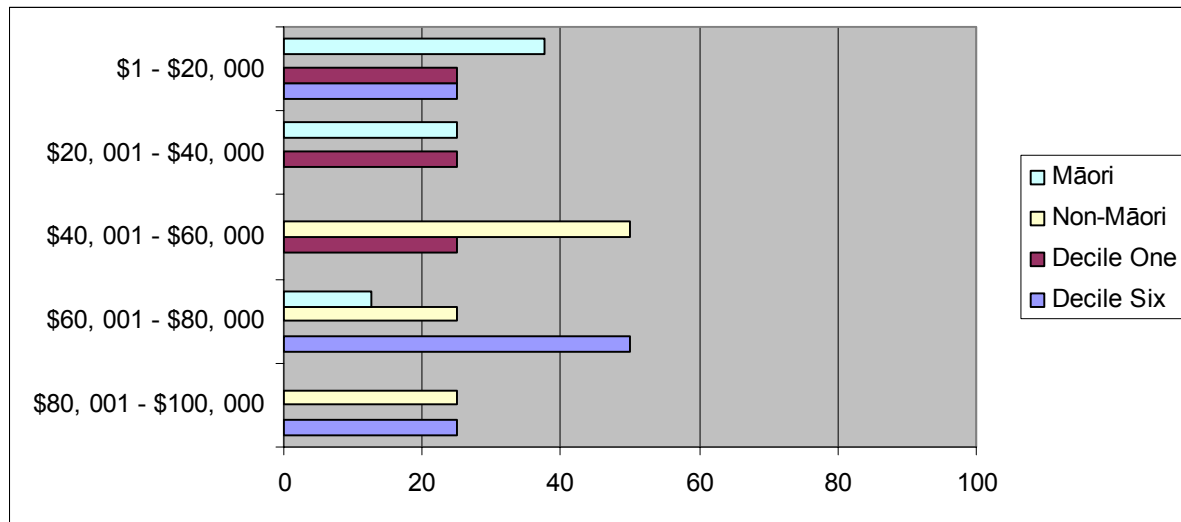


**28. What is your household income before tax?**

The household income before tax of all respondents ranged from \$1 - \$20, 000 to \$80, 001 - \$100, 000. 25% of all respondents said their income was \$1 - \$20, 000. All of whom were Māori and 66.7% of whom had children at the decile one schools.

62.5% of Māori have an income lower than \$40, 000 whereas all non-Māori had an income higher than this amount. Furthermore, 75% of decile six respondents had an income higher than \$60, 001. 75% of decile one respondents had an income below this amount.

**Figure 3.31 Household income before tax of Parents/ Caregivers (%)**



## **SEMI-STRUCTURED INTERVIEWS**

### **Child Oral Health Inequalities**

Dental Therapist A explicitly stated that children from decile one schools have a much higher caries rate than decile ten children. She praised the oral health standards of decile ten children describing their teeth as “very, very good”, “nice and clean”, “easy to examine” and describing their gums as “nice and pink and healthy”.

Similarly, Dental Therapist B stated that lower decile children generally require more treatment (“work to do”) than children in higher decile schools:

*I would see in a lower decile school you would have probably about 75% of the kids with work to do whereas when they were screening they probably had 25% of their 5 year olds with work to do.*

### **Barriers to Care**

Both dental therapists suggested that the following ‘Barriers to Care’ were responsible for the poor oral health status of Māori children.

### ***Affordability***

Both Therapists said that a high proportion of decile one children come from single parent, unemployed, low paid families and also these children have a tendency to not own a toothbrush and have high sugar diets. Therefore it is reasonable to presume that because Māori are over-represented in the lower socio-economic deciles and hence have a limited spending power, dental care would take a low priority among the weekly necessities (Ministry of Health 2003a).

Income also controls the type of diet a family may adopt. Generally, the lower the income the poorer the nutritional value of the diet. For example, because milk is considered more expensive than other leading fizzy drinks Māori families will often chose fizzy drink as a preferred choice (Broughton 2000; National Advisory Committee on Health and Disability 2003). Dental Therapist B emphasised this point further:

*You know like when you stand and look in somebody's supermarket basket now you will see mostly people will have a whole lot of fizzy drink or something like that. It becomes a regular thing in the family diet. Whereas when I grew up, or probably yourself, that was used for special occasions, so it's because probably fizzy drink is cheaper than milk and all those sort of ideas.*

However, Dental Therapist A suggested that the problem may be more a matter of prioritising as opposed to affordability.

### ***Parental Knowledge***

Dental Therapist B explained that parental knowledge of oral health varies according to social and economic class. She found that Māori are less educated and subsequently poorer than non-Māori. Dental Therapist B found that with low income parents you are really educating them on basic nutrition and oral health practices. Whereas in higher decile schools the prime focus is on discussing opinions that the parents may have on say contentious issues such as water fluoridation. She found that discussing and



balancing opinions is often more difficult than educating parents on basic nutrition and oral health practices.

Both dental therapists also found that children located in high decile schools often received more parental support than children located in low decile schools:

One possible explanation for this is the educational level obtained by the parents (usually the mother). A number of studies have found that more highly educated people have more favourable dental health behaviours, such as lower sweet consumption, more frequent brushing, and a routine (rather than episodic) dental visiting pattern (Broughton, 2000; National Advisory Committee on Health and Disability, 2003).

### ***Role-Modelling***

It was recognised that negative attitudes towards dental services is still very widespread among Māori, especially adults, and may lead to some Māori parents (and their whānau) avoiding contact with the SDS (National Advisory Committee on Health and Disability 2003). Consequently, this attitude is passed on to their children. Dental Therapist B suggested that this negative attitude may be partly due to dental procedures in the past which were in her opinion a lot slower and more painful than procedures nowadays.

### ***Mobility of Dental Therapist and Child***

One obvious factor raised by Dental Therapist A was the transient nature of decile one families. This means that there is a much higher risk of these children missing out on the short and valuable time the dental therapist spends at each school.

*Quiet often the families that are moving around they actually can miss out on the dental treatment unless the parents are proactive and ring up to a dental clinic and ask that they want their children to be checked or have a problem we don't actually see those children until the next time we are at that particular school. So that is a problem.*

## Oral Health Initiatives in Hamilton City

### **Education**

Dental Therapist A said there are a number of Māori focused oral health resources freely available from Population Health Services. These include information pamphlets and posters. Colgate teacher resource kits are also accessible to dental therapists but are only available in limited supply. Dental Therapist A noted that because of this resources are distributed to children on a needs basis. As a result Māori are usually the main beneficiaries.

*For example, [School X] has got 560 children so we are just not able to give out 560 toothbrushes so we tend to give them to the children that need them. Like for example if children don't have a toothbrush or if teachers are doing a dental health lesson in the class. If we have the toothbrushes then they will get the toothbrushes basically but it is no longer possible to give every child at toothbrush cos we are not supplied in mass numbers anymore with brushes.*

Both dental therapists said they educate children on a one-on-one basis when they are getting screened and/ or treated in the dental clinic. Apart from this Dental Therapist B said she frequently goes into classrooms to educate children in a group setting. However, as she explained, this is less frequent at 5 years of age. Dental Therapist A said she only educates children when they enter the dental clinic.

Dental Therapist B said she also tries to educate those parents who are present when their child is getting treated.

*I like nothing better than meeting a parent in the clinic and ... you know give as much information to them as you can. It's stupid to sit there with the parent and not actually saying anything to them and that's your opportunity.*

She said she also writes oral health segments in school newsletters. These contain basic information on good oral health care, such as what snacks are recommended in school lunchboxes, and how to brush teeth correctly.

### ***Increasing Preschool Enrolment***

One of the ongoing challenges raised throughout my discussions with both Therapists has been increasing preschool enrolment in the SDS, particularly in low decile areas.

As Dental Therapist B noted:

*Yeah there is probably heaps of kids out there we don't see. How to get those because you know we do interact with quite a few groups of people, like professional people to find those people. But yeah I'm sure there is a lot more out there than we see.*

To alleviate this problem a number of initiatives have been implemented in recent years. Dental Therapist A noted that in 1992 Health Waikato contracted Te Mana o te Aroha Wānanga to design a health promotion package aimed at Waikato kohanga reo children. The promotional package included a story book, poster, musical tape and information booklet. She informed me that the package was well received by teachers at the kohanga reo but she was unsure whether the package was or is made available.

### ***Nutritional Awareness in Schools***

Dental Therapist B explained that for the past two years all Waikato pupils in the 11 schools in the poorest decile 1 receive one free piece of fruit daily through the Government's Fruit in Schools schemes, and 5- and 6- year-olds in those schools are getting free milk from Fonterra. Children in decile 2 to 4 schools are getting a free apple a day through the winter months, thanks to a Hamilton orchardist and the Perry Foundation (Collins 2006; Waikato DHB, 2004).

### ***Evaluating the Effectiveness of Oral Health Initiatives***

All three preschool initiatives were described by Dental Therapist A as extremely effective.

*In all these initiatives that I was involved in I found that they were very effective in the sense that we were able to, we got children enrolled, preschoolers enrolled in the dental clinic so that was great. As well, the parent and whānau were there with the child so you had the opportunity to perhaps offer them advice and encourage them to enrolment and dental health counselling.*

Furthermore, the 'Hauora Tamariki morning was described "a huge success" resulting in the enrolments of 98 children that morning. The 'Tiakina o Niho day won a Health Waikato Award in 2003 and the 'Hauora Tamariki' was nominated for the same award in 2006.

Similarly, Dental Therapist B said that the 'Tiakina o Niho' Day was successful because it was undertaken in two parts. This enabled the dental therapists a greater chance of catching hard to reach kids. She also felt that providing low decile schools with free milk and apples has a positive effect on child oral health:

*And we'd started to see a difference last year. You know the kids would come over to have their teeth looked at and instead of picking off ... or getting rid of cookies and things like that out of their teeth to look at their teeth we were picking off bits of fruit so that must much be better in the long run anyway.*

### **Guidelines for Improving Māori Oral Health**

Both dental therapists noted that a multitude of factors are required to improve the oral health of Māori children as "there is no one simple quick-fix answer".

### ***Re-educating Parents***

Both therapists considered the role of the parent/ caregiver to be the most influential on the child. Both felt it important for parents to actively encourage children to adopt good oral health practices.

Dental therapist B said that parents do not realise that the SDS operates differently to when they were children. At the moment, some parents do not realise that dental therapists are moving from school to school, this is in spite of efforts made to put signs on the door indicating where they are. She said that this may be because those parents grew up with having a dental therapist in their own school all the time.

In the near future Dental Therapist B said there has been a proposal to close some Hamilton clinics and make other clinics larger. According to Dental Therapist B, this may prove to be difficult to implement in low socio-economic areas as “just the initiative to actually get to another clinic may be quite difficult for some parents to comprehend.”

In addition, Dental Therapist A felt that many parents/ caregivers are not aware that the SDS is a free service and their child could be enrolled at 2 ½.

To alleviate this problem Dental Therapist A suggested employing Māori educators. The role of the Māori educator would be “to educate parents and provide dental health education in schools”.

### ***Returning Consent Forms***

Dental Therapist B felt that getting children to return consent forms is an ongoing problem in low decile schools. She said that there needs to be more of a collective effort made by dental therapists, teaching staff and whānau to alleviate the problem.

### ***Attracting more Māori to the Oral Health Profession***

Although Māori are participating at all levels of the oral health workforce (including those in statutory governance, management, policy advice and teaching) Māori remain under-

represented in the New Zealand health workforce in almost all areas of the health sector (HWAC 2003). In the oral health profession for example only two percent of current dental technicians identified as Māori. Given that Māori at all ages have worse oral health than non-Māori attracting more Māori into the dental profession have been identified as a priority, particularly in order for kaupapa Māori services to be adequately resourced and supported. Dental Therapist A suggested attracting more Māori secondary school students into the health and science fields as one possible approach (National Advisory Committee on Health and Disability 2003).

### ***Improving Menus in School Canteens***

Despite media and public pressure to improve canteen menus in schools, Dental Therapist B argued that “not a lot has changed”. As a past PTA Board member she noticed that it was difficult to implement these changes as “the wider community didn’t consider it important enough or they didn’t want the changes”. Although improving children’s diets is an ongoing challenge, changing canteen menus may be equally difficult to achieve.

### **Other Suggestions**

#### ***Revised Recall Period for “At – Risk” Children***

Dental Therapist A argued that “at-risk” children should be seen more frequently than other children. At the moment all children are seen every 12 months sometimes this may be less often (i.e. once every 16 + months).

#### ***More Mobile Dental Units***

Dental Therapist A argued that more mobile dental units need to be set up to visit children at kohanga reo (at the moment they have to come into the school clinics).

## CHAPTER FIVE: ANALYSIS AND RECOMMENDATIONS

### LIMITATIONS OF RESEARCH

The total number of participants in this research study was significantly less than what I initially envisaged. Before research began I approached 32 participants to take part in the research study however only 25 participated in the study. The remaining seven people explicitly stated they did not want to participate, did not eventually return their consent forms or did not attend school on the day of their respective focus group meeting.

The overall small response rate meant that I was unable to obtain a wider range and depth of responses particularly when it came to coding responses according to specific ethnic, gender and decile groups viewpoints. For example, it was difficult to compare Māori children at decile one and decile six level given that there were more Māori at decile one level (five children) than decile six (two children).

More specifically, not all groups were equal. In total:

- 15 participants were Māori and 10 non-Māori
- 21 participants were female and only four were male. All participants who completed the written questionnaires and participated in the semi-structured interviews were female.
- 15 participants were from the decile one schools and only 9 were from the decile six school.

### **Focus Group Meetings**

In some cases it was extremely difficult to ascertain general findings from the focus group meetings as children gave varied and essentially dubious responses. Because of

the nature of their responses, the results from the focus group meetings need to be read with caution. The most important difficulties have been mentioned below.

### ***Restlessness***

I found it extremely difficult at times trying to maintain the children's interest for the entire duration of the meeting. Amato and Ochiltree (1987) found in their research with Australian children that group interviews made it impossible to ensure confidentiality and were distracting for some children (Zwiers and Morrisette, 1999).

As a result, if I sensed that children were getting restless I would briefly let them control the conversation until I felt they were ready to resume the research conversation.

One of the obvious difficulties with this however was that I had to be aware of the time constraints. Because of this I had to move through the questions relatively efficiently and I was always hopeful that the children would remain focused.

### ***Shyness***

In some instances children felt extremely shy and/ or uncomfortable in being interviewed. This may also be contributed to the small size of some groups (i.e. School B which had just two participants). As a result some children may have felt pressured to respond. This made extremely difficult to analyse the findings. This was particularly evident in the focus group meeting involving the children from School B. Both children from School B replied 141 times and 91.6% of their responses were one word answers. This meant that just 18.4% of their responses involved two or more words per response.

### ***Peer pressure***

According to Wilson and Powell (2001) a child may report false information to make it consistent with a peer. In addition, children may lie i.e. to impress the facilitator/s. Because of this, it became difficult to believe what they were saying. Peer pressure was clearly evident in the following example involving children from School A:



*Kirstin: Has anyone got a toothbrush at home?*

*Di: I do! I have two.*

*James: I do ...*

*Mei: I got heaps. I got one, two, three, four ...*

*Riana: Everyday you got to brush your teeth!*

*Kirstin: Oh. So everyone has a toothbrush?*

*Riana: I do. I have 16!*

*Kirstin: You have 16 toothbrushes? Wow!*

*Tahu: I have three toothbrushes!*

*Di: I have two.*

*James: I have 100!*

*Mei: I have my Mums. I have my sisters ...*

### **Embarrassment**

In some cases children and parents may lie because they are embarrassed. For example children may feel embarrassed that they do not own a toothbrush or brush their teeth every day. Similarly, parents/ caregivers may feel embarrassed because they have not taken their children to the school dental clinic before he/ she was 5 years old they have never been to the dentist before.

### **Conducting Research in Māori**

According to Linda Smith (1999 p.9) the Māori language is a significant component in KMR. Furthermore, she states, “[t]he language ... is a window to ways of knowing the world ... and also a way of interacting in the world.”

Before the research began I was informed by the Principal of School B that children at her school were encouraged to speak Māori at all times and that most of the children involved in the focus group meeting came from kohanga reo. In addition, both children who participated in this meeting expressly stated that they wished to talk in te reo Māori. Due to my inability to speak Māori confidently one of the problems I faced was being unable to conduct the research involving this school. Although I would have a

significant input into the direction of the interview the feeling was one of exclusion and frustration, given that this was my own research study. This meant I had to rely entirely on my co-facilitator to gather the data on my behalf.

## **FINDINGS OVERVIEW**

Results from this study suggest that Māori and decile one children are more likely than non-Māori and decile six children to:

- require dental treatment (i.e. fillings, tooth extractions etc.);
- suffer from toothaches, and
- be referred to a dentist for dental treatment

Similarly, non-Māori and decile six children are more likely than Māori and decile one children to:

- eat healthier foods and more servings of fresh fruits and vegetables;
- own a toothbrush;
- brush their teeth at least once a day, and
- know where their school dental clinic is located

Finally, non-Māori and decile six parents/ caregivers are more likely than Māori and decile one parents/ caregivers to:

- rate their own teeth and gums higher
- eat more servings of fresh fruits and vegetables
- be non-smokers
- have some sort of formal qualification
- have a higher household income before tax
- check their child's teeth has been cleaned properly

A number of factors were believed to be responsible for this disparity including the cultural inappropriateness of oral health services and resources, affordability, role-modelling, parental awareness and education, and the transient nature of families.

## **RESEARCH FOR FUTURE INQUIRY**

This research was of an exploratory nature. As this research progressed it seemed that other questions emerged from the data that was presented. Other initiatives in this area that may be explored include:

- comparing Māori to specific non-Māori ethnic groups i.e. Asian and Pacific groups
- comparing different groups of Māori i.e. rural/ urban, traditional/ urbanised and Māori living in fluoridated/ unfluoridated areas
- comparing Māori at different age groups
- analysing the effectiveness of existing child oral health strategies i.e. child oral health initiatives and educational resources (Laird, 2001).

In addition, a more comprehensive understanding of child oral health can be accessed by conducting research in association with:

- parents and whānau
- principals
- teachers (preschool and primary)
- oral health professionals i.e. Regional Dental Health Promoters, Dentists, Doctors
- the Māori community i.e. Te Ao Marama, Māori Community Health Worker, Māori Dental Provider Services.

## **CONCLUSION**

This study was significant and equally unique because despite the severity of Māori children's oral health in Hamilton City, a study of this nature had not been undertaken in this region before.

However, due to a number of limitations this thesis must be read with caution. The final number of participants in this research study was significantly less than what I initially

envisaged. Before research began I approached 32 participants to take part in the research study however only 25 participated in the study. The reduced response rate meant that I was unable to obtain a wider range and depth of responses particularly when it came to coding responses according to specific ethnic, gender and decile groups viewpoints. More specifically not all groups were equal. There were more Māori than non-Māori, more female than male and more participants from the decile one schools compared to the decile six school.

In addition, in some cases it was extremely difficult to ascertain general findings from the focus group meetings as children gave varied and essentially dubious responses. Because of the nature of their responses, the results from the focus group meetings need to be read with caution. The most important problems I encountered with the children included restlessness, shyness, peer pressure and embarrassment. I was also affected by own limitations - being inexperienced in interviewing and interacting with 5-year-olds and my inability to speak te reo Māori fluently.

Nonetheless, a wide range of valuable information has been generated as a result of undertaking this study. Such information may be of use to local and central governments, the health sector and Māori health communities. I welcome more research to be done in this area in alignment with a kaupapa Māori framework.

## **RECOMMENDATIONS**

To conclude this study, the following recommendations are made:

### ***Recommendation 1***

*It is recommended that schools take a more proactive stance in improving the oral health of Māori children*

For children, oral health problems (if left untreated) can result in pain and discomfort, inattentiveness in class and absenteeism from school. Therefore oral health problems can hinder a child's learning. For this reason it is important that schools work

collaboratively with children, parents/ caregivers, whānau and dental therapists to address this problem. Such actions may include: improving school canteen menus and educating parents/ caregivers on ideal oral health practices i.e. through school newsletters

### **Recommendation 2**

*It is recommended that the recall period for “at-risk” children to the school dental clinic be revised*

At present, all children are seen once every 12 months, irrespective of their state of oral health. For those who miss out on the valuable time the dental therapist spends at each school (i.e. due to changing schools) this may be less frequent i.e. once every 16+ months. Dental Therapist B suggested that “at risk” children (or children with oral health problems) be seen more often than children who do not require dental treatment.

### **Recommendation 3**

*It is recommended that parents/ caregivers and whānau regularly encourage their child and younger whānau members to adopt good oral health practices*

Overall, parents who ignore their own personal oral health care are poor role models for their children. Oral health care is learned behaviour and if the parent or caregiver does not practice favourable oral health behaviours (such as low sugar consumption, frequent toothbrushing and a routine dental visiting pattern) then their children are not likely to comply (Broughton, 2000; National Advisory Committee on Health and Disability, 2003). It has been suggested that negative attitudes towards oral health care stem from embarrassment, unhappy memories of the SDS as a child, limited spending power, unawareness of the availability and operation of oral health services and low educational achievement. Low socio-economic standards of living remain the root of the problem for Māori and if this can be improved then so to will a corresponding improvement in Māori oral health.

**Recommendation 4**

*It is recommended that more specific resources are produced to promote positive health messages for Māori.*

Māori specific resources (for example, people (i.e. children, marae, communities) or objects (i.e. brochures, posters, books, balloons and clothing (Kamira et al, 1999) are one of many critical tools that can educate and promote positive oral health messages for Māori parents, families and children. However, compared to other child health areas, oral health resources are under-developed and not always culturally appropriate. Using past initiatives as a template, any successful strategy needs to be simple and clear, and incorporate initiatives for, by and with Māori (Broughton, 2001).

**Recommendation 5**

*It is recommended that oral health professionals become more conversant with the health beliefs, attitudes and cultural practices of the Māori people.*

Many health professionals are not aware of the cultural factors pertaining to Māori beliefs, attitudes and practices regarding health. In addition, most dental surgeries are not equipped to accommodate for whānau members who come in support of the patient. Because of this many Māori for example will not present for dental care or will only do so when the “pain has driven them there.” Therefore, Māori are less likely to utilise dental services unless they feel comfortable themselves (Broughton, 2000; Health Research Council Newsletter, 1995; National Advisory Committee on Health and Disability, 2003).

**Recommendation 6**

*It is recommended that more Māori enter the oral health profession.*

Although Māori are participating at all levels of the oral health workforce (including those in statutory governance, management, policy advice and teaching) Māori remain under-represented in the New Zealand health workforce in almost all areas of the health sector

(HWAC, 2003). In the oral health profession for example only two percent of current dental technicians identified as Māori. Given that Māori at all ages have worse oral health than non-Māori attracting more Māori into the dental profession have been identified as a priority, particularly in order for kaupapa Māori services to be adequately resourced and supported. Dental Therapist A suggested attracting more Māori secondary school students into the health and science fields as one possible approach (National Advisory Committee on Health and Disability, 2003).

### ***Recommendation 7***

*It is recommended that more mobile dental units be set up to visit Hamilton kohanga reo*

Distance and a lack of adequate transport (including the cost of transport) may prevent Māori from accessing oral health services (National Advisory Committee on Health and Disability 2003). At the moment kohanga reo children have to come into school dental clinics to be seen. Dental Therapist A suggested that more mobile dental units be set up to visit children at kohanga reo instead of having them visit the dental therapist.

### ***Recommendation 8***

*It is recommended that more dental assistants be employed in the Hamilton region to accommodate for the increase in school rolls*

At the moment dental therapists are shared amongst a large group of dental therapists. Dental Therapist A suggested that each dental therapist should have their own dental assistant to assist with increasing school rolls. This way more children will be able to be seen in the school year and the opportunity is created to see “at-risk” children more than once a year.

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## LIST OF ABBREVIATIONS

DHB	District Health Board
dmfs/ DMFS	decayed/ missing/ filled surfaces. Usually defined as the average number of surfaces which have been affected by dental caries (“dmfs” for deciduous teeth and “DMFS” for permanent teeth)
dmft/ DMFT	decayed/ missing/ filled teeth. Usually defined as the average number of teeth which have been affected by dental caries (“dmft” for deciduous teeth and “DMFT” for permanent teeth)
HFA	Health Funding Authority
HWAC	Health Workforce Advisory Committee
KMR	Kaupapa Māori Research
MAF	Ministry of Agriculture and Forestry
mft/ MFT	missing/ filled teeth (“mft”) for deciduous teeth and “MFT” for permanent teeth)
MOH	Ministry of Health
MWWL	Māori Women’s Welfare League
N/A	Not applicable
N/C	No comment
NZDA	New Zealand Dental Association
PTA	Parent Teachers’ Association
SDS	School Dental Service
TPK	Te Puni Kokiri (Ministry of Māori Development)
USA	United States of America
WHO	World Health Organisation

## GLOSSARY

### ENGLISH TERMINOLOGY

Children	People between 0 and 14 years of age.
Deciduous teeth	the 20 “baby teeth”, which erupt sequentially between six and 30 months of age are eventually succeeded by the permanent teeth.
Decile rating	indicates the socio-economic rating of the schools student sample. A decile is based according to household income, occupation, household crowding, educational qualifications and income support with decile 1 schools being the most deprived.
Dental caries	also known as “tooth decay”
Dental Assistant	Person who assists the dental therapist
Dental Therapist	Previously known as the dental nurse, their role is to provide basic dental treatment to children and adolescents.
Determinants of health	All factors which influence health, including individual lifestyle factors, social and community influences, living and working conditions, and general socio-economic, cultural and environmental conditions.
Ethnicity	A social group whose members: <ul style="list-style-type: none"><li>• Share a sense of common origin</li><li>• Claim a common and distinctive history and destiny</li></ul>

- Possess one or more dimensions of collective and cultural individuality such as unique language, religion, customs, mythology or folklore.

Health	The WHO broadly defines health as a complete state of physical, mental and social well-being, not just the absence of disease (WHO, 1985). Māori definitions of health include physical, spiritual and family health as well as cultural elements such as land, environment, language and extended family.
Oral Health	Usually defined in terms of the absence of disease affecting the oral mucosa teeth, tongue and surrounding cranio-facial structures.
Periodontal disease	A disease of the soft tissues and bone which support the teeth in the jaws, it can ultimately lead to teeth loosening so much that they fall or have to be extracted.
Permanent teeth	The 32 adult teeth (preceded by “Deciduous Teeth”).
Primary Caregiver	A person who identifies as the child’s main guardian. This person need not be biologically related to the child.

## **MĀORI TERMINOLOGY**

Auahi Kore	Māori smoke-free
Aotearoa	New Zealand
Hapu	Sub-tribe
Hauora	Health
He Korowai Oranga	Māori Health Strategy
Hui	Event, meeting
Iwi	Tribe
Kaiāwhina	Workers, helpers, assistants
Kanohi-ki-te-kanohi	Face-to-face
Karakia	Prayer
Kaupapa	Strategy, theme
Kaupapa Māori Research	“[R]esearch by Māori, for Māori and with Māori” (Smith 1995)
Kohanga Reo	Language nest, Māori pre-school
Kura Kaupapa	Total Immersion Māori Primary School (usually for children aged 5 – 13 years)
Koha	Donation, gift
Māori	A person indigenous to New Zealand (see ethnicity)
Marae	A traditional meeting place for Māori who unite under a common ancestor and/ or purpose. Operations on the marae are governed by the strict protocols of the local tribe or sub-tribe.
Niho	Teeth
Ngā Puhi	A large tribe covering the most of the Northland region
Ngāti Kahungunu	A large tribe covering the Wairoa, Hawkes Bay and Wairarapa regions
Oranga Niho	Oral wellbeing, oral health



Oranga Whānau	Family wellbeing, family health
Pākeha	New Zealand European (particularly of British origin)
Rangatahi	Youth
Rongowhakaata	A small tribe located in the Hawkes Bay and Poverty Bay areas.
Tamariki	Children
Tainui	The predominant tribe in and surrounding the Hamilton City region
Tangata whenua	Local people, people of the land
Te Ao Māori	Māori worldview, Māori perspective
Te Ao Marama	New Zealand Māori Dental Association
Te Iwi Māori	The Māori community, the Māori people
Te Reo	The Māori language
Tino Rangatiratanga	Absolute Authority
Whakapapa	Genealogy, cultural identity
Whānau	Family (including extended family)

## **APPENDICES**

Appendix A: Letter to Principal

Appendix B: Letter to Parent/ Caregivers

Appendix C: Letter to Dental Therapists

Appendix D: Participant Information Sheet

Appendix E: Oral Health Questionnaire for Parents/ Caregivers

Appendix F: Focus Group Questions for Children

Appendix G: Interview Questions for Dental Therapists

Appendix H: Participant Consent Form (Parents/ Caregivers and Children)

Appendix I: Participant Consent Form (Dental Therapists)

Appendix J: Overall Findings from Parent/ Caregivers Questionnaires

Appendix K: Overall Findings from Focus Group Meetings

Kirstin Te Amo

[Insert physical address]

[Insert home phone number]

[Insert cell phone number]

[Insert email address]

[Insert date]

The Principal

[Insert address of school]

Tēna koe,

My name is Kirstin Te Amo. I am a Masters student in the School of Māori and Pacific Development at the University of Waikato.

I am currently undertaking a Masters research study entitled: '*Oranga whānau. Oranga niho. The oral health status of 5-year-old Māori children. A case study*'. The aim of my research is to access the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. My research focuses on the impact that social, economic, cultural and environmental factors have on oral health.

I am writing to seek your permission to undertake my research study with selected 5-year-old children at your school.

If you agree, I would like to select **[insert number]** 5-year-old Māori and **[insert number]** non-Māori children from your school to participate in a focus group meeting to be held at your school. I would be very happy to meet with you to discuss the matter if you prefer.

It is anticipated the focus group meeting will take no longer than 20 minutes. If you grant approval I would like to meet with you or a school representative to begin the research. I would like to conduct the research study in October. If you are agreeable I would appreciate a teacher being present during the focus group discussion.

In addition to the focus group discussion I intend sending a letter to the selected children's parents/ caregivers to seek their permission for their child to participate in the study also. I would ask parents to return their written approval to your office in the first instance.



At the conclusion of the focus group meeting I have a small gift to hand to participants.  
If you have any further questions please do not hesitate to contact me. I look forward to hearing from you soon.

Nāku noa,

nā Kirstin Te Amo

Please find attached copies of the:

- Participant Information Sheet
- Participant Consent Form
- Letter to Parents/ Caregivers
- Oral Health Questionnaire for Caregivers
- Focus Group Questions for Children

Kirstin Te Amo

[Insert physical address]

[Insert home phone number]

[Insert cell phone number]

[Insert email address]

[Insert date]

The Caregiver

[Insert address of school]



Tēna koe,

My name is Kirstin Te Amo. I am a Masters student in the School of Māori and Pacific Development at the University of Waikato.

I am currently undertaking a Masters research study entitled: '*Oranga whānau. Oranga niho. The oral health status of 5-year-old Māori children. A case study*'. The aim of my research is to access the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. My research focuses on the impact that social, economic, cultural and environmental factors have on oral health.

I would like to invite you/and or seek your permission to have your child participate in my research study.

If you wish to participate or grant permission for your son or daughter to be involved, could you please tear off the required section of the consent form, place it in the attached envelope and return it to your child's school office by **[insert due date]**.

If you have any further questions please do not hesitate to contact me. I look forward to hearing from you soon.

Nāku noa,

nā Kirstin Te Amo

Please find attached the:

- Participant Information Sheet
- Participant Consent Form
- Oral Health Questionnaire for Caregivers
- Focus Group Questions for Children

Kirstin Te Amo  
[Physical address]  
[Home phone number]  
[Cell phone number]  
[Email address]

[Insert date]

[Insert name of dental therapist]  
[Insert address of school where dental therapist is based]



Tēna koe,

My name is Kirstin Te Amo. I am a Masters student in the School of Māori and Pacific Development at the University of Waikato.

I am currently undertaking a Masters research study entitled: '*Oranga whānau. Oranga niho. The oral health status of 5-year-old Māori children. A case study*'. The aim of my research is to access the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. My research focuses on the impact that social, economic, cultural and environmental factors have on oral health.

I would like to invite you to participate in my research study.

If you wish to participate, could you please contact me by **[insert date]** to confirm this.

If you have any further questions please do not hesitate to contact me. I look forward to hearing from you soon.

Nāku noa,

nā Kirstin Te Amo

Please find attached the:

- Participant Information Sheet
- Participant Consent Form
- Interview Questions for Dental Therapists



## School of Māori and Pacific Development Participant Information Sheet

*Oranga whānau. Oranga niho.*  
**The oral health status of 5-year-old Māori children. A case study.**

Kia ora,

My name is Kirstin Te Amo. I am currently a Masters student in the School of Māori and Pacific Development at the University of Waikato.

### **Description of study**

The aim of my research is to access the dental wellbeing of Māori 5-year-old children currently residing in the Hamilton City region. My research focuses on the impact that social, economic, cultural and environmental factors have on oral health. The study is being supervised by Materoa Dodd, Senior Lecturer, University of Waikato.

The participants in this study will be Māori and non-Māori 5-year-old children currently residing in the Hamilton City region, their caregivers and Hamilton City based dental therapists.

The results of this study will be published in my Masters thesis in February 2007.

### **Participants in this study and their roles**

A total of 32 participants will be invited to take part in this research study: 15 children, up to 15 caregivers and 2 dental therapists.

- **Children**

15 5-year-old Māori and non-Māori children will be randomly selected from three schools in the Hamilton City region. Five children will be chosen to represent each school.

For each school sample, a focus group meeting will take place in a vacant classroom at (each) school. Each focus group meeting is expected to take no longer than half an hour.

It is planned that each focus group will be co-facilitated by one teacher who is known to the group. Children are encouraged to respond in either Māori or in English. All responses will be tape recorded

- **Caregivers**

Once the children have been determined, up to fifteen primary caregivers who are willing to participate will also be invited to take part.

Questionnaires will be sent home to the caregivers of the children. They will be given up to one week to complete the questionnaires. Completed questionnaires need to be returned to the schools main office.

- **Dental therapists**

Two dental therapists who work in the Hamilton City region will be independently interviewed using a semi-structured interview format. Interviews will take place at locations convenient to them both. Each interview is expected to take no longer than 20 minutes. Both interviews will be tape recorded.

**Welfare of data at the completion of the study**

On completion of this study, any personal information will be destroyed immediately but any raw data on which the results of the study depend will be retained in secure storage for five years after which it will be destroyed.

**Confidentiality of participants**

Participants will not be identified in any publication/dissemination of the research findings without their explicit consent. Any information collected during the course of the study will be viewed only by myself and my supervisor.

**The rights of participants**

Participants in this study have the right to:

- refuse to answer any particular question, and to withdraw from the study at any time.
- ask any further questions about the study that occurs during participation.
- examine and amend the transcript of the interview.
- be given access to a report of the findings from the study when it is completed and published.
- determine the disposal of interview tapes, transcripts of interviews, and personal documents made available to the researcher.

**Contact details**

If you have any additional questions please do not hesitate to contact me:

Kirstin Te Amo

[Insert home phone number]

[Insert cell phone number]

[Insert email address]





## School of Māori and Pacific Development Oral Health Questionnaire for Caregivers

***Oranga whānau. Oranga niho.***  
**The oral health status of 5-year-old Māori children. A case study.**

*Thank you for participating in this research questionnaire,*

*Your responses will help me get a better understanding on the impact that social, economic, cultural and environmental factors have on the oral health of Māori and non-Māori 5-year-old children living in the Hamilton City region. The results gathered from this questionnaire will be published in my Masters thesis in February 2007.*

*This questionnaire is expected to take **no longer than 20 minutes** to complete. There are three parts to this questionnaire. For each question, please place a tick in the box at the left of the answer you think is most appropriate, and/ or write in your answers when requested. You may consult with other members of your family if needed. **All responses will be kept strictly confidential.***

*Once completed, please place the questionnaire in the return self-address envelope provided and return it to your child's school office by **[insert date]**.*

### **PART ONE: THE ORAL HEALTH OF YOUR CHILD**

#### **EATING HABITS**

1. On average, how many servings of fresh fruit and vegetables does your child eat per day?  
(a serving is about a handful and is relative to your child's age and size)
  - ☐ My child doesn't eat fruit or vegetables
  - ☐ Less than 1 serving per day (i.e. half an apple)
  - ☐ 1 - 2 servings per day
  - ☐ 3 - 4 servings per day
  - ☐ 5 + servings per day

2. Does your child snack between meals?

☐

Yes

☐

No (*go to question 5*)

3. If 'Yes' at what time/s of the day does your child normally snack?

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4. What type/s of food or drink/s does your child normally snack on during these times?

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### **TOOTHBRUSHING**

5. Who brushes your child's teeth?

(Tick one only)

☐

Child only

☐

Child, occasionally assisted by parent or older person

☐

Child, usually assisted by parent or older person

☐

Parent or older person only

☐

Don't know

6. How often does your child usually brush his/ her teeth?

(Tick one only)

☐

Never

☐

A few times a week or less

☐

Once a day

☐

Twice or more a day

☐

Don't know

7. If your child brushes his/ her teeth alone, how often do you look at them to see if they have been cleaned thoroughly:

☐

Daily

☐

Not every day but more than once a week

☐

Less than once a week

☐

Never

☐

Not applicable

## **SCHOOL DENTAL SERVICE**

### **Before 5 Years of Age:**

8. Has your child ever attended a school dental clinic **before** he/ she was 5 years-old?

- ☐ Yes  
☐ No (*go to question 12*)  
☐ Don't know (*go to question 12*)

9. If 'Yes' at what age was his/ her first visit?

(*Write in age, or tick box if "don't know"*)

☐ \_\_\_\_\_ Years \_\_\_\_\_ Months  
☐ Don't know

10. On whose advice did you make this first visit?

(*Tick one only*)

- ☐ Dental professional (i.e. school dental therapist, plunket nurse, dentist, doctor)  
☐ Relative  
☐ Own wish  
☐ Other (please specify) \_\_\_\_\_  
☐ Don't know

11. If your child had not been to the school dental clinic, before this age is this because:

(*More than one box may be ticked*)

- ☐ You did not know the service was available to children under 5  
☐ You thought a dental professional would contact you at the right age  
☐ You thought it wasn't necessary until your child started school  
☐ You didn't like the school dental clinic and/ or school dental nurses when you were a child  
☐ You thought your child would be afraid  
☐ It's something you never got around to doing  
☐ Other (please specify) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
☐ Don't know

**5 Years of Age:**

12. Has your child attended the school dental clinic this year?

☐

Yes

☐

No (*go to Question 14*)

☐

Don't know (*go to Question 15*)

13. If 'Yes', did your child require dental treatment? (I.e. fillings, tooth extractions etc.)

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14. If 'No', what were the reasons why?

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**General:**

15. Has your child ever suffered from a toothache?

☐

Yes

☐

No

16. Has your child been referred to a dentist for dental treatment?

☐

Yes

☐

No

17. Has your child ever had sedation or a general anaesthetic to have their teeth treated?

☐

Yes

☐

No

18. Has your child had any teeth removed because of decay or abscesses?

☐

Yes

☐

No

## **PART TWO: YOUR OWN ORAL HEALTH**

### **INDIVIDUAL ASSESSMENT**

19. If you have your own natural teeth, how would you grade your teeth and gums?

- ☐ Excellent
- ☐ Very good
- ☐ Average
- ☐ Very poor
- ☐ Don't know
- ☐ Not applicable – no natural teeth

### **THE DENTIST**

20. Have you ever visited a dentist before?

- ☐ Yes
- ☐ No

21. If 'No', what was your reason for not visiting the dentist?

*(More than one box may be ticked)*

- ☐ Nothing wrong
- ☐ Afraid of dentist
- ☐ Too expensive
- ☐ Too far to go
- ☐ Haven't the time
- ☐ No/ or false teeth

### **NUTRITION**

22. On average, how many servings of fresh fruit and vegetables do you eat per day?

- ☐ I do not eat fruit or vegetables
- ☐ Less than 1 serving per day (i.e. half an apple)
- ☐ 1-2 servings per day
- ☐ 3-4 servings per day
- ☐ 5 + servings per day

<b><u>PART THREE: GENERAL INFORMATION</u></b>
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23. Are you:

- ☐ male  
☐ female

24. Are you:

- ☐ New Zealand Māori  
☐ Non-Māori (*any ethnic group other than New Zealand Māori*)

25. Please indicate your age bracket:

- ☐ < 21  
☐ 22 – 35  
☐ 36 – 45  
☐ 45 +

26. Are you a:

- ☐ smoker  
☐ non-smoker

27. What is your highest formal qualification? (*Do not count incomplete qualifications or qualifications that take less than 3 months of full-time study to complete*).

- ☐ NZ School Certificate in one or more subjects  
☐ NZ Sixth Form Certificate in one or more subjects  
☐ NZ University Entrance in one or more subjects  
☐ NZ Higher School Certificate, or Higher Leaving Certificate  
☐ NZ A or B Bursary, or Scholarship  
☐ Trade or Technical Certificate  
☐ Tertiary Qualification (i.e. Diploma, Bachelors, Masters, PhD degrees)  
☐ Other (*please specify*)

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- ☐ No formal qualifications attained

28. What is your annual household income before tax?

- ☐ \$1 - \$20, 000
- ☐ \$20, 001 - \$40, 000
- ☐ \$40, 001 - \$60, 000
- ☐ \$60, 001 - \$80, 000
- ☐ \$80, 001 - \$100, 000
- ☐ \$100, 001 +
- ☐ Don't know

Thank you once again for participating in this research questionnaire.



## School of Māori and Pacific Development Focus Group Questions for Children

***Oranga whānau. Oranga niho.***  
**The oral health status of 5-year-old Māori children. A case study.**

### **BREAKFAST**

1. Does anyone have breakfast in the morning?
2. What do you normally have for breakfast?
  - Toast? *What type of bread? What type of spreads do you have on them? How much toast do you have? What type of bread?*
  - Cereal? *What type? Do you have sugar on it? How much? (i.e. weet-bix)*
  - *Does anyone have anything else for breakfast?*
3. What's your favourite thing in the whole world to have for breakfast?

### **MORNING TEA**

5. What do you normally eat for morning tea?
  - *(If food specified is general then ask "what type"? i.e. what type of fruit? What type of biscuit? What flavour roll up? What flavour drink?)*

### **LUNCH**

6. What do you normally have to eat for lunch?
  - *(If food specified is general then ask "what type"? i.e. what do you have in your sandwiches? What type of fruit? What type of biscuit? What flavour roll up? What flavour drink?)*
7. Do you bring a drink bottle to school?
  - *What type of drink do you normally have?*
8. Has anyone ever forgotten to bring their lunch to school?
  - *What happens if you have forgotten to bring your lunch to school?*
9. What's the most favourite thing that you normally eat at lunch times?
  - *Why?*
10. What's the least favourite thing you normally eat at lunch times?
  - *Why?*



### **SCHOOL CANTEEN**

11. Is anyone lucky enough to have brought lunch from the school canteen?
  - *What do you normally buy for lunch?*
12. How often do you buy your lunch?
  - *Every week? Once in a while? Everyday?*
13. What else do you buy at the canteen?

### **AFTERNOON TEA**

14. Do you have an afternoon snack when you get home after school?
  - *If so, what do you normally eat?*
15. Do you have anything to drink with your afternoon snack?
  - *If so, what do you normally drink?*

### **SUPPER**

17. Do you normally have something to snack on before you go to bed?

### **FAVOURITES**

19. What is your most favourite food in the whole wide world? It could be for breakfast, lunch or tea.
  - *Why?*
20. Does anyone like fruit?
  - *What is your favourite fruit? What fruit don't you like?*
21. Does anyone like lollies?
  - *What is your favourite lolly? What lollies don't you like?*

### **SCHOOL DENTAL CLINIC**

22. Have any of you been to the dental clinic before?
23. Where is the school dental clinic?
  - *Which direction?*
24. How do you know when it's your turn to go to the dental clinic?
25. What happens when you go there?
  - *What does the dental therapist do?*
26. Does someone else go with you when you go or do you go by yourself?
  - *Are you allowed to take a friend, does Mum or Dad go with you?*

### **TOOTH BRUSHING**

27. Has anyone got their own toothbrush at home?
28. If so, what does your toothbrush at home look like?
  - *For example - what colour is it? What shape is it?*
29. Do you brush your teeth at home or does someone help you?
  - *How often do you brush your teeth?*
30. *Do you brush your teeth everyday? Once in a while? When you can remember?*
31. What does your toothpaste taste like at home?
  - *Does it taste nice or is it yucky?*

32. How do you brush your teeth?

- *Can anyone show me?*

### **GENERAL DISCUSSION**

33. Can anyone tell me why we brush our teeth?

34. Can anyone tell me some types of food that are healthy for us?

35. Can anyone tell me some types of food that are bad for us?



## School of Māori and Pacific Development

### Interview Questions for Dental Therapists

***Oranga whānau. Oranga niho.***  
**The oral health status of 5-year-old Māori children. A case study.**

#### **Introduction**

1. What primary schools do you currently work with?
2. Where are they located?
3. What are their decile ratings?

#### **Oral Health Inequalities**

4. How important is it for children to have healthy teeth and gums at 5 years of age?
5. In your experience what are the differences in the oral health standards of 5-year-old children at a decile one school compared to a decile ten school?
6. What 'type' of children are located within these schools? (*i.e. ethnic groups, socio-economic groups*)
7. In your opinion, why do Māori 5-year-old children generally have worse teeth and gums compared to non-Māori 5-year-old children?
8. How long have you observed this?

#### **Improving Māori Oral Health**

9. Can you tell me about some oral health initiatives in the Hamilton City region that are targeted at Māori children?
10. Have these proven to be effective/ ineffective?
11. In your opinion, can you describe what needs to be done to improve the oral health of Māori children?
12. What are some of the challenges that prevent this from happening? (*i.e. monetary costs, labour costs*)



**School of Māori and Pacific Development  
Participant Consent Form for  
Parents/ Caregivers and Children**

***Oranga whānau. Oranga niho.***  
**The oral health status of 5-year-old Māori children. A case study.**

*N.B Caregivers are required to provide consent on behalf of their child.*

1. I have read all the attached information and have had the information explained to me.
2. I am aware I can ask questions at any time.
3. I understand that participation in this study is entirely voluntary and that my child and I are free to withdraw from the study at any time, or to decline to answer any particular questions in the study.
4. I understand that any information my child and I provide to the researcher will be met under the conditions of confidentiality set out on the Information Sheet.
5. I consent to my child being a participant in the study if I am unable to participate.
6. I agree to Kirstin Te Amo recording the focus group
7. I understand that the data will be destroyed at the completion of the study, but any raw data on which the results of the study depend will be retained in secure storage for five years, after which it will be destroyed.

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*(Please place your completed form in the attached stamped self-addressed envelope and return it to your child's school office by [insert date].*

**I consent/ do not consent to participation in the 'Oranga whānau. Oranga niho' research project. (Delete what does not apply).**

Participant's Name (caregiver): \_\_\_\_\_

Participant's Name (child): \_\_\_\_\_

Participant's Signature (caregiver): \_\_\_\_\_

Contact details (*only provide contact details if you consent to participation*):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**School of Māori and Pacific Development  
Participant Consent Form for  
Dental Therapists**

***Oranga whānau. Oranga niho.***  
**The oral health status of 5-year-old Māori children. A case study.**

1. I have read the attached information and have had the information explained to me.
2. I am aware I can ask questions at any time.
3. I understand that participation in this study is entirely voluntary.
4. I understand that I am free to withdraw from the study at any time, or to decline to answer any particular questions in the study.
5. I understand that any information I provide to the researcher will be met under the conditions of confidentiality set out on the Information Sheet.
6. I agree to this interview being taped.
7. I understand that the data will be destroyed at the completion of the study, but any raw data on which the results of the study depend will be retained in secure storage for five years, after which it will be destroyed.

**I consent/ do not consent to participation in the ‘*Oranga whānau. Oranga niho*’ research project (*Delete what does not apply*).**

Participant’s Name: \_\_\_\_\_

Participant’s Signature: \_\_\_\_\_

Date:    /    /

Contact details (*only provide contact details if you consent to participation*):

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