Māma ki tama: Feeding families in a food insecure environment: a qualitative study

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Joanne Lisa Urlich

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Abstract

Background: More than one in five children in New Zealand live in food poverty, meaning that they live without access to sufficient wholesome food for good health. Evidence suggests that Māori Mothers are more likely to experience food insecurity due to inequities in income, education, employment, and housing security. To achieve and maintain optimal health, a healthy diet is vital. Understanding food security experiences and perspectives which can impact nutrition status is necessary to improve health outcomes and reduce healthcare costs.

Kaitaia is a small town located in the Far North of New Zealand that serves a scattered population of around 21,000, where there is a high prevalence of socioeconomic deprivation contributing to poor health outcomes.

This study aimed to explore the perspectives and experiences of Māori mothers living in Kaitaia and their strategies to meet food access needs for their whānau (family).

Methodology: An inductive approach was undertaken to allow findings to emerge from the data. In-depth unstructured interviews were conducted with twenty Māori mothers living in the Kaitaia region who had at least one child aged two years or younger.

Interviews investigated dietary habits and routines, methods of food procurement, nutrition knowledge, skills and perceptions towards healthy food. Demographic characteristics of the participants were collected using a questionnaire.

Recorded interviews were transcribed and thematic analysis using NVivo was undertaken to identify, analyse and report themes emerging from the data.

Results: Three key themes were identified. Firstly, ensuring the whānau are fed, secondly accessing food from multiple avenues is a time-consuming journey and finally the need to cope with the unexpected and unplanned. Being well-connected to whānau, community groups, support services and having online digital access was pivotal for Māori mothers to meet whānau food needs.

Conclusions: Māori mothers placed priority on ensuring that their whānau are fed, with cost and taste of food the driving factors in food purchase decisions. Connections were key to navigate multiple avenues to access food and to cope with unexpected and unplanned circumstances.

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Abbreviations

ANS Adult Nutrition Survey

NNS National Nutrition Survey

WINZ Work and Income New Zealand

Glossary of Māori Words and Terms:

aroha	love
iwi	Tribe, tribal kin group, nation
kai	food
kaimoana	food sourced from the ocean
karakia	prayer
koha	gift/donation
kete	basket
Kohanga reo	early childhood educational centre, where learning is conducted in Māori language
māhaki	articulate
māhinga kai	traditional gathering of food
mana	prestige, status, authority, influence, integrity; honour, respect
manaakitanga	respect; hospitality, kindness; mutual trust, respect and concern
Māori	indigenous people of Aotearoa/New Zealand
māra kai	garden; gardening
pātaka kai	community pantry, food for anyone to help themselves to with no cost
Te Hiku Hauora	Māori health provider
Te Whare Tapa Wha	Māori health model
tangi/tangihanga	funeral
taonga	resource which is highly prized
tūmanako	hope/anticipation/expectations
wāhine	women
whakaaro	thoughts and opinions
whakapono	belief, faith, trust
whānau	family; nuclear/extended family
whanaungatanga	relationships

Chapter 1: Introduction

1.1 Justification for Study

New Zealand is an exceptional country where it has the opportunity to be sustainable in food production and meet the food needs of the entire population by providing a high-quality nutritious diet and still be able to maintain an export market.

New Zealand has numerous initiatives and programmes for instance kickstart breakfasts, fruit in schools, pātaka kai, food rescue, food banks and food grants in place. Yet, there is a lack of a national food strategy or policy addressing food security to support food access needs.

Despite the country's ability to have an efficient and effective food production system, the Household Food Insecurity Among Children in New Zealand summary from the New Zealand Health Survey found nineteen percent of children still experience moderate to severe food insecurity and whānau struggle to meet their food access needs (Rush, 2019)

These rates of food insecurity are experienced inequitably across the country with Māori women being among the most affected, especially those with low income, poor educational attainment and/or who are raising children (Beavis et al., 2019; Pereira et al., 2017).

Food security is defined as "a limited or uncertain availability of nutritionally adequate and safe foods or limited ability to acquire personally acceptable foods that meet cultural needs in a socially acceptable way" by the New Zealand Ministry of Health Survey (Ministry of Health, 2019).

Being food insecure may impact nutritional status which consequently results in increased risk of non-communicable diseases like cardiovascular disease, type 2 diabetes mellitus and obesity (Mello et al., 2010). All of these non-communicable diseases decrease quality of life and place increased burden on the health care sector both financially and on capacity of care.

The current model of health care in New Zealand leans towards reactive disease management, which New Zealand had implemented in the process of colonisation. It contradicts Māori Health Models such as Te Whare Tapa Wha which embrace the Māori world view where if any part of this is unstable, health and wellbeing will be impacted (Beavis et al., 2019).

The 2020 New Zealand Health and Disability System Review has clearly stated the need for change in order to see improved health outcomes which establish equity for the whole population (Simpson, 2020). Recommendations from this review involve turning the focus to social determinants, lifestyle and behavioural factors as they contribute to 70% of health

outcomes (Simpson, 2020). Diet-related disease and adverse health outcomes are attributable to food security.

Understanding the lived experiences of those most at risk of food insecurity may assist to inform policy makers.

Kaitaia is a small town in the Far North of New Zealand with high levels of socio -economic deprivation, a high Māori population of over 30% compared to the national level of 16.5% making the population living in this region at increased levels of vulnerability (Environmental Health Intelligence New Zealand, 2019).

The purpose of this study was to gain an understanding of the perspectives and experiences that Māori mothers in Kaitaia face to meet food access needs for their whānau. Further to acknowledge their strategies and support systems which allow them to ensure that their whānau food access needs are being met.

In-depth face to face interview methods were chosen for the study as the most effective way to gather the data required.

1.2 Aims and Objectives

1.2.1 Aim

This study aimed to explore the perspectives and experiences of Māori mothers living in Kaitaia and their strategies to meet food access needs for their whānau (family).

1.2.2 Objectives

Objectives of the study were to use in-depth face to face interviews to:

1. Understand the dietary eating habits and routines of the participants
2. Understand food procurement methods employed by the participants and their related experiences
3. Understand nutrition knowledge and skills of the participants and their perceptions of healthy eating

Once interviews were completed to determine themes influencing food access needs being met and develop robust recommendations to influence the health sector and policy makers to reduce food insecurity

1.2.3 Research Question

To determine if Māori mothers living in Kaitaia who face food insecurity will utilise unique and innovative ways to ensure that the tummies of their children and whānau are full.

1.2.4 Eligibility to study

To participate in the study eligibility included being of Māori ethnicity, living in the Kaitaia region and with at least one child aged two years or younger

1.3 Thesis Structure

The thesis begins with an introduction and overview in Chapter One, with a literature review focusing on the specific aspects seen to be relevant to food access and security for Māori mothers in Chapter Two. It begins with eating patterns and dietary habits for Māori, food security among Māori, socioeconomic factors which affect food security, including the impacts of colonisation on food security for Māori and the impacts of food insecurity to nutrition status, health and wellbeing and whānau will be reviewed. Strategies and initiatives used to address food insecurity will be investigated from the evidence-based literature. Chapter Three is the research manuscript formatted for the New Zealand Medical Journal. Chapter Four is the conclusions and recommendations resulting from this study.

1.4 Researcher's contributions

Table 1.1: *Contributions to the study*

Researcher	**Contributions**
Joanne Urlich	Student researcher. Researched and prepared literature review, conducted in-depth interviews, analysed data and prepared thesis manuscript including tabulating results and forming discussion and recommendations.
Professor Carol Wham	Professor Wham advised methodology, proofread and gave feedback on the introduction and literature review.
Senior Lecturer Geoff Kira	Geoff advised methodology, proofread and gave feedback on the thesis manuscript and provided guidance regarding NViVo analysis of data

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Chapter 2: Literature Review

2.1 Eating Patterns and Dietary Habits for Māori

An in-depth assessment of eating patterns and dietary habits was conducted in New Zealand to assess the diets of Māori as part of the 2008/09 Adult Nutrition Survey (ANS). It was found that adult Māori consumed a higher intake of fat, 3.2% and 2.1% for men and women respectively, and higher total energy intake (1248kJ and 191kJ for men and women respectively) than non-Māori. This was an increase in both fat and total energy for Māori males aged 15 years and older between 1997 and 2008/09 (Ministry of Health, 2012). Māori men (11.3%) and women (17.3%) were less likely to regularly consume breakfast than non-Māori. Māori women were also less likely to meet the recommended vegetable and fruit intake on a daily basis than non-Māori (70.9%), a decrease from 65.1% in the 1997 Health survey to 59.2% in 2008/09 Health survey (Ministry of Health, 2012). Māori were also more likely to eat white bread than high fibre or grain breads, consume fried/battered fish and to add salt to food or meals than non-Māori. Māori males were three times more likely to consume fast food and takeaways more than three times a week than non-Māori males. It was found 41.8% of Māori males and 29.1% females consumed soft drinks and or energy drinks three or more times a week (Ministry of Health, 2012).

Between the 1997 National Nutrition Survey (NNS) and the 2008/09 ANS, body mass index increased from 29.0 to 30.3 for men and 29.1 to 30.8 for women and percentage of obese Māori from 41% to 42.7% for men and 40.4% to 48.3% for women. Māori men are 18.5% and women 25.4% more likely to be obese than non-Māori (Ministry of Health, 2012).

Food choice for food insecure households tends to be for low-cost options which are often energy dense and nutrient poor (Beavis et al., 2019; Franklin et al., 2012; Mello et al., 2010). Among food insecure Māori satiety may be prioritised over healthy eating which in turn influences taste preferences and nutritional status (Beavis et al., 2019).

Health concerns such as hypertension, diabetes and micronutrient insufficiencies are also more likely in Māori than non-Māori. Māori experience inequities in health status and access to health services (Moeke-Pickering et al., 2015). In the 1997 NNS a third (32%) of Māori women stressed about lack of money for food and 17% accessed food banks or special food grants (Parnell et al., 2001). In order for Māori to experience good quality of life they need abilities, skills, motivation and opportunities to develop healthy eating practices and dietary habits which

follow the Ministry of Health Eating and Activity Guidelines for New Zealand Adults (Ministry of Health, 2015). Even though these guidelines are well established and embedded in the health sector many New Zealanders particularly Māori engage in unhealthy eating practices that include high consumption of highly processed and fast food due to the surrounding obesogenic food environment (Vandevijvere et al., 2018). Healthy eating guidelines are more effective when they are relevant to the targeted populations values and beliefs, as foods communicate history, memories, social status and feelings (Beagan & Chapman, 2012; Hesketh et al., 2005). A healthy well-balanced diet leads to improved hauora (health and wellbeing) including healthy weight, reduced non-communicable disease and increased ability to be physically active, a key component of a good quality of life.

2.2 Food Security among Māori

Food security is commonly defined "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". (FAO, 1996; Upton et al., 2016) and is determined by three pillars; food availability, food use and food access (FAO, 1996). Ideally a food secure environment applies to all people at all times, covers physical, social and economic access for an active and healthy life, it is influenced by the physical, economic, socio-cultural and political environments (Parnell & Smith, 2008; Upton et al., 2016). The 2008/09 ANS found two thirds of Māori households experienced food insecurity at some level and were more likely to experience food insecurity than non-Māori (Ministry of Health, 2012). When a population is food secure improved health, wellbeing and social outcomes can be achieved.

Food insecurity occurs when food access is either limited, uncertain or compromised (Beavis et al., 2019; Carter et al., 2010; Franklin et al., 2012; Graham, 2020; Parnell et al., 2001). Access to adequate food that is affordable and healthy to provide quality nutrition care is considered a basic human right, specifically for indigenous people (FAO, 1996; Ministry of Health, 2019). Food security goes beyond the concept of food insufficiency and includes not only the quantity of food, but also the quality of the food alongside the availability and acceptability of the food from cultural perspective and was it accessed in a socially acceptable consistent manner which means stealing, relying on others, coping strategies and accessing food banks or grants are not required to meet food access needs.

The number of Māori living in fully/almost food secure households significantly decreased between 1997 and 2008/09 (Ministry of Health, 2012). In 2015/16, 19% of New Zealand children

were living in households with moderate to severe food insecurity (Ministry of Health, 2019). Food insecurity was higher in families on a benefit and Māori, this can be explained by more Māori living in low-income households. Māori children are overrepresented in food insecure households at 38.8% while only making up 25.7% of the population (Ministry of Health, 2019). Māori experience higher rates of poverty and experience higher incidence of nutrition related disease (Grant et al., 2010). Māori families are more likely to be in the low-income bracket and have an increased risk of food insecurity due to a number of factors including inequitable employment opportunities, whānau and cultural obligations and household size and composition.

2.3 Socioeconomic Factors which Impact Food Security

Racial and ethnic minorities, low-income families, with low education and employment, households headed by females and where children are part of the household are at greater risk of food insecurity, placing them at increased risk and or prevalence of diet-related disease. (Franklin et al., 2012; Mello et al., 2010; St-Germain & Siddiqi, 2019). Food insecurity indicators specific to New Zealand replicate global findings and also include deprived neighbourhoods, Māori or Pasifika, younger age, unmarried, sole parent families, large families and poor parent-related health such as overweight/obesity, poor self-rated health status, unemployment, asthma and behavioural/developmental difficulties (Carter et al., 2010; Franklin et al., 2012; Ministry of Health, 2019; Moeke-Pickering et al., 2015). In addition to the indicators, there are also barriers such as lack of money, cost of healthy food, lack of knowledge and skills, portion sizes, preparations, cooking, nutrition, budgeting, rural isolation and lack of time (Lanumata et al., 2008). Children exposed to these environments in their first five years of life may lack the lifelong sustainable healthy dietary patterns that children living in food secure environments are more likely to have (Graham, 2020). Access to healthy foods is often obstructed by inequities in the systems and processes that affect everyday life. Families living in poverty, insecure housing, lack of employment and education opportunities can all impact on food security for young children and the wider family.

2.3.1 Poverty

Poverty is a primary driver and strongest predictor of food insecurity resulting in social exclusion, isolation, monotony of food choice, loss of dignity and increased stress and anxiety for those households, it limits resources to purchase and obtain food in acceptable ways (Carter et al., 2010; Graham et al., 2018b; Jung et al., 2017; St-Germain & Siddiqi, 2019). Deprivation is reported in quintiles in New Zealand, with quintile 1 being the least deprived and quintile 5 the

most deprived. New Zealanders living in highly deprived areas (quintiles 4 and 5, 11% and 20% respectively) have an increased likelihood of being food insecure, and are more likely to utilise special food grants or food banks (Carter et al., 2010). The Northland District Health Board serves a population estimate (2020/2021) of 193,170, where more than 120,00 of these people are living in deprivation quintiles 4 and 5 and Māori are most likely to be living in deprivation quintile 5 in Northland (Ministry of Health, 2021b). Food security is related to the level of disposable income in the household (Carter et al., 2010). Other variable household costs such as electricity are often rationed which may impact on food purchases, this can include opting for foods that require minimal cooking to save on electricity (Graham et al., 2018b). The incidence of food insecurity increases in early to mid-adulthood when other resources; housing, clothing, children's health and education compete with the food budget (Parnell et al., 2001). In low-income families the cost of raising children can strain finances impacting on food purchases and food security (Zhen-Duan et al., 2019). Food insecurity is frequently periodic due to unforeseen income or employment changes, at certain times of the year or when other unexpected costs impact on the household budget, this then effects food secure periods as they are spent preparing for future food insecure episodes and attempts to mitigate the risk (Barrett, 2010; Franklin et al., 2012).

The perceived high cost of healthy foods is perceived as the biggest barrier to improve diet quality but poverty alone is not exclusively responsible for poor diet quality (Laraia et al., 2017). Food insecurity within the household is alleviated when income is increased (Beavis et al., 2019). Economic hardship is not exclusive or a defining characteristic of food insecurity, but food insecurity does increase with increasing deprivation quintiles (Carter et al., 2010; Utter et al., 2018). Low-income and the rising cost of healthy foods are the biggest barriers for Māori to obtain food security (Carter et al., 2010).

The food budget is often the only modifiable portion of income unlike fixed costs such as rent (Parnell & Smith, 2008). This in turn then means the food budget is the most likely to be impacted in any financial changes. Low-income families are required to spend a greater portion of their modifiable income on basic foods just to meet the New Zealand food and nutrition guidelines (Beavis et al., 2019). These same low-income families are also more likely to be dependent on other supports such as food banks, food grants or support from whānau for food and money for food (Beavis et al., 2019). It was found in the 2015/16 New Zealand Health

Survey households with income of less than $30, 000 were the most likely to be food insecure (Ministry of Health, 2019).

By increasing income alone will not guarantee an improved quality of diet. Stabilisation of income and employment, housing and food security may increase the ability to access good quality food and reduce stress, improve sleep influencing quality eating behaviours for Māori. In low-income households, food insecurity is a greater risk due to the other costs of living, as income declines the risk of food insecurity increases.

2.3.2 Food Security among Māori Mothers

Lack of money is related to food security and is more likely to be experience by women (Carter et al., 2010; Parnell et al., 2001; Parnell & Smith, 2008) especially those who are solo parents and responsible for food provisioning and caring for the family (Jung et al., 2017; Lanumata et al., 2008; Parnell et al., 2001; Parnell & Smith, 2008). Food insecurity in New Zealand households with two parents is 12.7%, increases to 38% in sole parent households, In New Zealand 80% of sole parents are women and more likely to be in the low-income category (Carter et al., 2010; Ministry of Health, 2019). New Zealand women who are food insecure have stated that they can only afford to eat properly sometimes and that food runs out due to lack of money (Carter et al., 2010). Mothers may skip or restrict meals for themselves to ensure children remain food secure (Franklin et al., 2012; Jung et al., 2017; St-Germain & Siddiqi, 2019). As there are disparities between men and women with respect to food insecurity it is important to factor in gender equity into food security interventions and policies.

Whānau Māori (Māori families) specifically wāhine Māori (Māori mothers), may also be influenced by cultural worldviews. The Māori worldview of health includes the physical, mental and emotional, spiritual and social. If any part of this is unstable then general health and wellbeing is impacted (Durie, 1984). Māori have strong spiritual and cultural connections to land, waterways and coastal areas. Pre-colonisation, Māori had established extensive māra kai (gardens) and māhinga kai (food gathering) locations. Loss of access to land, pollution of waterways impacts on the ability to grow food and generate income (Parnell & Smith, 2008). Historical factors including land and resource dispossession post-colonisation of New Zealand leading to Māori losing access to food, becoming vulnerable to economic restructuring and employment disparities (Beavis et al., 2019). These historical impacts are still very much visible today and have generational inequities which see poorer health outcomes for whānau Māori. This is particularly true for food and nutrition (Grant et al., 2010). Food security may also involve

reciprocal giving and involved sustainable food supplies for all, to benefit the whole community, enhance cultural identity and provide a nutritionally sound diet for health and wellbeing (Graham et al., 2018a; Wham et al., 2012). Food gathering, preparation and consumption are a key way in which families connect amongst themselves and represents a broader social structure.

2.3.3 Household Factors Impacting on Food Security for Māori

Household size of seven or more, particularly Māori are more likely to experience food insecurity, with 40.9% stating that the household cannot always afford to eat properly (Carter et al., 2010; Ministry of Health, 2003). Larger households experience increased food insecurity and inequitable food distribution (Parnell et al., 2001; Parnell & Smith, 2008). Food insecurity increases to 37.7% in families of four or more children as opposed to families in a one child family (Ministry of Health, 2019). Households with children, minority groups, female-headed and low income are at increased risk of food insecurity which leads to poor dietary practices resulting in impacted physical and mental health outcomes (Lombe et al., 2016; St-Germain & Siddiqi, 2019). The larger the household and the presence of children in the household place an increased risk of food insecurity to that particular household.

Location of a household can be a factor in food security in terms of access to food and the surrounding environment (Barrett, 2010). Food insecurity can also be impacted by proximity to supermarkets, food stores and transport to access these sites (Parnell et al., 2001; Parnell & Smith, 2008). This can have particular impact for those living in isolated rural areas of Kaitaia region with limited or no transport access. Low-income neighbourhoods often have reduced access to grocery stores (Laraia et al., 2017). Food sourcing may include multiple trips to the supermarket for those who are highly conscious of the budget and resources (Graham et al., 2018a). Adapting to healthy eating guidelines may be harder for Māori who are over represented in low socioeconomic areas, where there is an increased exposure to poor food choices, over-availability of processed and fast food and decreased availability and increased cost of fresh produce (Beagan & Chapman, 2012).

In households which experience high levels of food insecurity, they are often in rented property that is not a stable home, influenced by landlords and rising house prices making opportunities to garden harder. This coupled with weather impacts such a significant drought in Kaitaia seeing enforced water restrictions further inhibits the ability of a food insecure household to

implement vegetable gardens as a means to supplement the food budget. While there may be education and knowledge around ways to improve food security through gardening it may not be achievable or sustainable to that household. Community gardens are often cited as being a way to address food security but they can be difficult to establish and even more so to maintain, making them an unreliable unsustainable source for reducing food security (Batten & Holdaway, 2011; Brody & de Wilde, 2020; Eizenberg, 2012).

Hospitality of food insecure households is often impacted preventing them from inviting friends and whānau to share a meal (Beavis et al., 2019). Food is what brings people together from many cultures particularly for Māori whānau. It is an opportunity to connect and celebrate. Food is a common way for Māori families to express manaakitanga (sharing and hospitality), whānaungatanga (relationships) and aroha (love) (Beavis et al., 2019). When food insecurity is experienced by a family, the bringing together of people is inhibited, this can have impact for mothers and children when a shared dinner, visitors and friends for a meal is a burden can result in social isolation for all members of the family. Foods communicate history, memories, social status and feelings (Beagan & Chapman, 2012). Food insecure caregivers experience increased levels of stress and difficulty coping with children around both the quantity of food available and also the quality of food being consumed (Lombe et al., 2016; Ministry of Health, 2019; Utter et al., 2018). Parents who cannot adequately provide food for their families feel substantial shame and stigma of food insecurity they learn to hide the realities to avoid public scrutiny (Graham et al., 2018b). Parents of food insecure households have been shown and expressed anxiety and concern about the impacts to their children's health, wellbeing and development, leading to compensatory feeding practices which may be unhealthy and detrimental to health (Rosa et al., 2018).

Children who experience food insecurity may have parenting implications in later years for their own children's dietary habits irrespective of ethnicity (Rosa et al., 2018). Childhood food insecurity for impacts future generations for both meal time and food attitudes, having an impact on population health and wellbeing (Rosa et al., 2018). Those who experience food insecurity during infancy, childhood and adolescence can result in adverse health and wellbeing outcomes throughout life including developmental consequences (St-Germain & Siddiqi, 2019). This can include practices to avoid food insecurity, emotional eating, overconsumption and excessive providing of food and avoidance of foods associated with hardship (Rosa et al., 2018). Through experiencing food insecurity, the physical, emotional and mental health and wellbeing

of a person can then be impacted not only at the point of experience but throughout the rest of their life.

Food insecurity is a complex issue for Māori, that is reflective of the inequities in the determinants of health; income, employment, housing, education and cultural identity. ”For indigenous populations, food represents a respect for humanity, living species, a sustainable ecosystem, respect for the land and for the future” acknowledging the sacredness of Māori life and wellbeing (Moeke-Pickering et al., 2015). Being able to have adequate food and the abundant ability to share with others, increases mana (pride) and manaakitanga (sharing and hospitality) while also respecting the environment (McKerchar et al., 2015). Colonisation and urbanisation of New Zealand had impacts on traditional food security systems for Māori through the displacement of traditional foods from the diet placing Māori at nutritional risk (Wham et al., 2012). For Māori, food is considered medicine for the body, mind and the bringing together of people. Traditionally food was distributed communally, sharing of food, gathering, preparing and planting for Māori are considered a source of pride and love, associated with happy interactions between generations ensuring that while the healthy and strong hunted and gathered the children and elderly were cared for. Māori are disproportionally affected by food security due to social, political, economic and cultural determinants of deprivation which then impacts on utilisation and access to healthcare, nutrition, education, food security leading to poor health outcomes and increased risk and prevalence of non-communicable disease.

2.4 Strategies to Address Food Insecurity

Food banks and grants have been established to support food access however they do not resolve food security issues. These aids are often time consuming and not guaranteed as people need to often undergo budget scrutiny making this a conditional relationship for food access (Graham et al., 2018a). Strategies to meet food access needs despite poverty and food insecurity is an attempt to have control over the situation with limited control over circumstances. Feelings of shame and embarrassment when accessing support systems are interestingly not experienced when accessing support from family as it is perceived that family want to help (Rosa et al., 2018). House sharing is a tactic to reduce the costs of living by pooling resources and may result in multiple whānau and generations living in one household, this can alleviate household costs to improve food security (Graham et al., 2018a). Only one third of Māori live in fully/almost food secure households, this means that two thirds of Māori are not

in food secure households. Signifying for Māori families the wider whānau support network is crucial for food insecure households being able to meet food access needs.
With poverty comes insecurity and stress so families need to develop strategies to address food insecurity (Graham et al., 2018b). Strategies to alleviate food insecurity include increasing the amount of food coming into the household, stretching meals, parents skipping meals, using fillers like bread and trying to make these strategies acceptable and desirable to increase feelings of security (Rosa et al., 2018). New Zealand has numerous initiatives to mitigate occurrence of food insecurity for children and their families, despite this it is still a persistent problem for many households.

Strategies such as freezing, reusing, minimising waste, growing your own, accessing community gardens and meals can assist food insecurity and avoid public scrutiny. These strategies can provide temporary relief but it is often not a long term solution and can bring other complications (Graham et al., 2018b). Parents will make best attempts to hide food insecurity from children and will take steps to ensure that there is something to eat including accessing wild foods, reducing meal sizes, limiting variety and eating at family members houses (Rosa et al., 2018). Food purchases are considered carefully to ensure they will stretch and sustain the household. Meat is often considered a luxury purchase for many, which is ironic considering the high availability of livestock in New Zealand. Careful and considered food choice is heavily influenced by food security status.

The 1996/97 National Nutrition Survey in New Zealand showed that 4% of households accessed food banks and this had increased to 10% by 2002. In 2018 the Ministry of Social Development had reported that lack of food was the main reason for needing hardship assistance whereby the Salvation Army had distributed 56,500 food parcels in 2016 (Carter et al., 2010; Ministry of Health, 2019). Substandard foods like rotting produce are often cheaper and provided in food packs but are not socially acceptable to eat.

Strategies employed by Māori to overcome food insecurity are related to broader Māori values (Beavis et al., 2019). “Food banks can stigmatise the poor, legitimise public begging and mark the erosion of social rights” (Riches, 1997). Food banks may help with short term food provision but are not a feasible long-term sustainable solution (Parnell & Smith, 2008). Use of food banks and food grants is a poor indicator of food insecurity as they are often not accessed due to the stigma which is attached to accessing (Ministry of Health, 2019). Utilisation of food banks and

grants may increase the risk of obesity (Franklin et al., 2012). This may be in part due to the foods provided by the food banks or the instability of food supply that from those who need to access food banks and or grants. Food assistance programmes can alleviate food insufficiency but then have health impacts due to the nutritional quality and social implications of access (Franklin et al., 2012). Even when strategies are employed that mitigate food insecurity, this is not always associated with a sense of security and positivity especially if the strategies are unacceptable or stigmatised (Rosa et al., 2018). Seasonal events, like Christmas and birthdays can increase stress levels and anxiety for food insecure households. Weekly activities like supermarket shopping can also be stressful and acts like rationing are employed as everyday social practice (Graham et al., 2018b). Food aid needs to be more than just bulk commodity food products but also provide therapeutic benefit (Barrett, 2010). Food aid and grants have the ability to have significant impact on food insecure household's health and wellbeing, consideration needs to be given to the food being supplied, the cost of food relief packages, and how it is to be accessed so as not cause stigma or additional barriers.

Food insecurity can lead to people feeling embarrassed and hurt that they cannot convey in words the experience (Graham et al., 2018a). Often one main shopping run a week is implemented to establish routine and attempt to stay within budget, this also helps to avoid the stigma of "being poor". Children may be placed in the trolley to avoid them picking extra food and the supermarket trip will be viewed as the weekly family outing which involves conversation about options and brand, and while cost is always a factor this may not be discussed. Often items such as noodles, white bread and weetbix are used to fill the gap (Graham et al., 2018a). Half full trolleys with cheap inexpensive foods can leave people feeling poverty-exposed (Graham et al., 2018b; Upton et al., 2016). In order for food security interventions to be effective they must be targeted to the appropriate people (Barrett, 2010). This can be difficult as often those who are most in need are difficult to identify possibly due to associated negative stigma, social isolation or perceived discrimination. Making it difficult to ascertain severity and prevalence of food insecurity for households as it can remain hidden and prevent people from accessing support network.

2.5 Government Initiatives

Food and health systems need to be transformed to see improved health outcomes (2020 Global Nutrition Report: Executive Summary, 2021). Implementing health system nutrition services, utilising nutrition professionals and delivering both preventative and curative nutrition

services can all improve health (2020 Global Nutrition Report: Executive Summary, 2021). Food insecurity in New Zealand is increasing and improvements are needed to reduce poverty, increase cooking skills, increase access to food. Potential supports to reduce food insecurity include increasing income or implementing tax cuts on healthy foods so that they are more affordable, health education, nutrition knowledge and skills training and increasing gardening (Lanumata et al., 2008). All of which includes working with the food industry, government policy changes and ensuring equitable access to nutritious food in a sustainable way. Nutrition actions at government level can be highly-cost effective and have long-term saving benefits to the health system.

Currently the New Zealand government has implemented initiatives such as Healthy Families New Zealand, a large-scale initiative which works at a community level to collaboratively reduce risk of chronic disease where people live, learn, work and play through increasing physical activity, improving nutrition, supporting people to be smoke free and reducing alcohol-related harm in 10 communities that are geographically spread and have high levels of deprivation, higher than average rates of preventable disease and higher than average risk factors for preventable disease including Healthy Families Far North (Ministry of Health, 2021a). New Zealand government has put in place conditional temporary supports such as food grants through Work and Income New Zealand, and since COVID lockdown started to support food banks. However, the government currently has not developed a Food Strategy, which needs to include a commitment to food security policy in order to see improved, food security for all New Zealanders.

2.6 Food Sovereignty

Strategies to alleviate food insecurity for Māori can include taking control back of the food system. Food sovereignty is often perceived as having control of land, local growing and distribution involving working together as communities and protecting knowledge for future generations for Māori (Moeke-Pickering et al., 2015). Revitalising traditional kai may alleviate food insecurity not only by increasing food availability but also by providing income and employment opportunities that could reduce current Māori inequities in terms of food insecurity (McKerchar et al., 2015). Whānaungatanga (relationships) helps to improve shared kai, knowledge and experiences which may reduce the burden felt by some food insecure households (Lanumata et al., 2008). By increasing gardening, hunting, gathering and positive interactions and ownership of food systems relevant to knowledge and skills may improve

health and wellbeing. Improving socio-economic interdependency and reciprocity may alleviate food insecurity without negative stigma being associated.

2.7 Interventions to Address Food Insecurity

Past measurement of food security has looked at food availability and access and more recently the utilisation and stability of this conditions has been assessed (Upton et al., 2016). When looking at interventions to improve food security multiple dimensions of society need to be considered from the individual and household level to the community and beyond to the regional, national and international influencers. At the household level, availability, accessibility, utilisation and stability of the food system impact the level of food security. In designing future interventions to improve food security, it needs to be targeted at the appropriate populations, buy-in needs to be ensured and designed in accordance with the need and be highly effective and efficient (Gross et al., 2000). In considering future strategies, increasing resilience to protect against future food insecurity as mitigation and a potential solution.

Interventions that address food insecurity need to include nutrition education and increase access and availability to healthier foods to positively influence food choice and dietary behaviours (Mello et al., 2010). Education to increase knowledge, skill and attitudes alongside policy interventions may help to alleviate food insecurity (Mello et al., 2010). An individual's knowledge about health, perceived self-efficacy and predicted positive outcomes from behaviours determines likelihood of adoption of health promoting behaviours (Zhen-Duan et al., 2019). The New Zealand government has implemented policy interventions to help alleviate food insecurity for children; free GP visits until 16years old (in Kaitaia this is extended to 18 years old), publicly funded dental programmes until the age of 18, kick start breakfasts and the recent introduction of Ka Ora, Ka Ako, healthy lunches in schools. Despite these intervention's food insecurity is still impacting 19% of all children in New Zealand. If nutrition education programs are being implemented as part of the intervention to reduce food insecurity, they must be culturally appropriate (Lombe et al., 2016). Studies show that nutrition knowledge provides protection against poor health outcomes however in food insecure households, the benefits of nutrition knowledge cannot impact on health status, therefore in order to improve health status, food security needs to be established (Lombe et al., 2016). By reducing the occurrence and impact of food insecurity to households can alleviate costs to the health system as a proactive health care measure.

Studies have shown that recalled childhood experiences of food insecurity often included parents ensuring children are feed, and strategies to mitigate food insecurity included asking family for support and stretching of meals and parents are portrayed positively as it is believed parents were doing their best (Rosa et al., 2018). Interventions to support low income households often consider barriers such as knowledge, skills, time and access constraints but do not consider previous experiences of food insecurity from childhood (Rosa et al., 2018). Potentially adding exacerbated pressure on the now parents to meet children's food access needs.

2.8 Summary

Of New Zealand land 45% is dedicated to food production, and can produce enough food to feed more than 20 million people per year (Rush, 2019). "Food insecurity is a far-reaching social issue that is not reducible to individual choice" (Graham et al., 2018b). By increasing awareness and understanding about poverty and food insecurity together with initiatives, food security could be achieved for all New Zealanders. New Zealand has the ability to be self-sufficient in terms of a viable food system and still contribute to the global food system. And yet despite this we still see 1 in 5 children exposed to food insecurity.

160,000 New Zealand children live in food poverty, meaning that they live without access or enough wholesome food for health (Rush, 2019). The causes for food poverty are complex and driven by many different social determinants.

Māori mothers in Kaitaia are faced with a wide range of ongoing social determinants which impact on their ability to choose enough healthy foods for their children. This may mean that children's tummies are filled, but they may be suffering from hidden hunger, the term used to explain what occurs when the quality of food people eat does not meet their nutrient requirements (Graham, 2020; Rush, 2019). For example, the diet may be deficient in micronutrients such as the vitamins and minerals that are required for their growth, development and optimal health status. Through measuring food security allows for diagnoses and appropriate targeted interventions.

Food insecurity puts populations at increased risk of diet-related non-communicable disease and illnesses which are rapidly increasing and placing increased strain on health systems. We

need to understand the true extent of the impacts of food insecurity on health, development and wellbeing to establish effective interventions.

Policy changes in GST, taxation reforms and housing market reforms could potentially alleviate prevalence of food insecurity in some New Zealand households (Parnell & Smith, 2008). Targeted policy interventions to increase income and improve food security are needed in New Zealand (Carter et al., 2010). If prevention is better than the cure, surely proactive approaches to increase food security should be a priority in New Zealand.

Overweight, obesity and poor dietary intake is the largest contributor to health loss currently in New Zealand. Globally there is increasing undernutrition coexisting with overweight/obesity and other diet non-communicable diseases. Current food systems are not designed to enable healthy food choices both through accessibility and affordability (2020 Global Nutrition Report: Executive Summary, 2021). If this issue is not addressed and rectified the ongoing and increasing cost to the country is significant. Māori and low-income families are overrepresented in the overweight and obese cohort and have some of the poorest health outcomes, which is often influenced by poor dietary intake due to food insecurity. Through understanding the realities of these whānau around food insecurity will not solve all of the issue. It will be able to inform funder/services to alleviate some of the declining health status.

The risks of food insecurity need to be ascertained for specific populations (Barrett, 2010). Ongoing research, developments and initiatives to enable stable food security for all New Zealanders is required. Through this study the understanding of how Māori Mothers meet their family's food access needs, can then inform what supports and services need to be developed and implemented, that are culturally aware and responsive to Māori needs in this region. It also offers the opportunity to take the precious taonga (resource) that these mothers are sharing and inform policy makers around what is really needed for food insecurity to be addressed for this population. It also provides a unique opportunity to privilege the voices of these mothers to service providers to empower their whakaaro (thoughts and opinions) about their own capabilities and capacity to care for their children.

Through the capturing of this data and dissemination into the correct channels can lead to potential changes in health status and address existing equity issues. Gathering and gaining a

true understanding of how Māori mothers address food insecurity, can assist to facilitate the development of effective interventions and services to support food security for New Zealand.

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Chapter 3: Research Manuscript

Title: Māmā ki tama: Feeding families in a food insecure environment: a qualitative study

Type of Manuscript:

Original Article

Full author list:

Urlich, J., Kira, G., Wham, C.

3.1 Abstract:

Aim: New Zealand produces enough food to feed more than 20-million people a year, despite this a lack of food security is a key issue for Māori. The study aim was to explore the perspectives, experiences and strategies of Māori mothers to meet food access needs for their whānau (family).

Methods: A qualitative descriptive enquiry was undertaken among Māori mothers living in Kaitaia (n=20) using an in-depth one-to-one interview. The experiences, perspectives and strategies used by the participants to meet food access needs for their whānau were explored including eating habits and routines, individual circumstances, nutrition knowledge and skills and perceptions and values towards healthy eating. Recorded interviews were transcribed and thematic analysis using NVivo was undertaken to identify, analyse and report themes emerging from the data.

Results: Three main themes were identified to influence food access needs: Firstly, ensuring the whānau is fed – "if it's cheap and filling, we'll get it", secondly, accessing food from multiple avenues is a time-consuming journey and thirdly, the need to cope with the unexpected and unplanned - being told "why didn't you see it coming".

Conclusion: Māori mothers placed priority on ensuring that their whānau are fed, with cost and taste of food the driving factors in food purchase decisions. Connections were key to navigate multiple avenues to access food and to cope with unexpected and unplanned circumstances.

3.2 Introduction:

High income countries such as Aotearoa New Zealand (NZ), have significant proportions of the population who are not food secure and do not have reliable access to nutritionally adequate, safe, personally acceptable foods at all times (McKerchar et al., 2015; Parnell et al., 2001). Food insecure households enact strategies in response to food insecurity such as missed meals,

restricted dietary intake, increased consumptions of energy dense foods and reduced intake of vegetables and fruit (Beavis et al., 2019; Ministry of Health, 2019; Rush, 2019). Food insecurity increases the risk of negative health outcomes including obesity, cardiovascular disease, diabetes, cancer and impact on emotional and mental wellbeing (Mello et al., 2010; Ministry of Health, 2019; Parnell & Smith, 2008; Utter et al., 2018).

Māori, the indigenous people of NZ, experience inequities in most health conditions (Ministry of Health, 2012). The colonisation of NZ has had long term intergenerational effects on wealth, health and discrimination for Māori population (Reid et al., 2017). Poverty is a key determinant of food security status. One in four Māori adults (23%) and children (32%) live in a low-income household and Māori women bear the burden of food insecurity with 47% of sole parent beneficiaries being Māori (Ministry of Health, 2012; Perry, 2019). In 2015/2016, 19% of Māori children were reported to live in a moderately to severe food insecure household and two-thirds of Māori households experienced food insecurity, twice as likely non-Māori households in 2008/2009 (Ministry of Health, 2012, 2019). The township of Kaitaia, far north of NZ, has high levels of socioeconomic deprivation with an unemployment rate of 18.9% and the Māori population of 32.4%, twice that of the national average (Environmental Health Intelligence New Zealand, 2019). High levels of food insecurity in excess of the national average are apparent. This study aimed to explore the perspectives and experiences of Māori mothers living in Kaitaia and their strategies to meet food access needs for their whānau (family).

3.3 Methods:

An inductive approach to a qualitative inquiry was undertaken using semi-structured face to face interviews (Bradley et al., 2007). A qualitative approach was seen to best suit the current study, as the aim was to understand the experiences and perceptions of Māori mothers with young children to overcome barriers towards providing food for their whānau. Eligible participants were women of Māori ethnicity, aged over 18 years with child/ren aged between 0 -2 years. A face-to-face in-depth interview was undertaken to allow for intense and detailed exploration of individual perspectives, thoughts, behaviours and experiences (Boyce & Neale, 2006).

An interview guide was developed and included questionnaire items to explore dietary habits and routines, methods of food procurement, nutrition knowledge and skills and perceptions towards healthy food. A review of the literature and discussion among the research team which consisted of public health and social scientists experienced in qualitative research helped to inform the development of the interview guide. Two pilot interviews were conducted to ensure

the content and language of questionnaire topics were appropriate and the flow and timing of the interview was acceptable. Two Māori mothers, one aged 25 years with one child and the other 30 years with five children participated in the pilot interviews. These pilot interviews were not included in the study sample. Adjustments were made to the interview guide to improve comprehension and coverage of the key topic areas.

Table 3.1: *Interview guide topics*

Eating routines and habits	Describe your usual food intake and eating routines
Food procurement	Describe your usual food shopping routine
Food procurement	What are the key influences on your purchasing habits
Food procurement	Describe other ways you source food for your whānau
Nutrition knowledge and skills	Discuss the importance nutrition and healthy eating for your household
Perceptions and values	What are the preferences and priorities for food among your whānau
Perceptions and values	How did COVID 19 impact on your food access
Perceptions and values	What would help to improve food access for your whānau

For each interview with Māori mothers, the interview guide was used as a simple format to ensure important topics were covered but, allow the conversation to be flexible and involved the use of probes, which allows rich detail to be gained (Britten, 1995). One interviewer (JU) conducted the interviews. When the same comments recurred, after 20 interviews, the authors considered the data collected to have been approaching saturation (Sandelowski, 2008). The research team included two Māori researchers, JU (Ngāti Kahu, Ngāi Tahu), GK (Ngāpuhi) who provided a cultural lens for the conduct of the research.

Ethical approval was obtained from the Massey University Human Ethics Committee: Northern region, (NOR20/17).

Participants were recruited in the Kaitaia region through poster advertisement by Māori Health Providers and community mothers' groups. Participants were contacted by the researcher and the timing of the interviews was planned at the convenience of the participants.

An information sheet provided by the researcher (JU) outlined the purpose of the study and written consent was obtained from the participants ahead of the interview.

A semi-structured face-to-face interview was conducted with each participant in their choice of venue (either their home, place of work or at Māori health provider premises) between September 2020 and November 2020; some participants were known to the interviewer through health professional interactions. Participants were encouraged to have a support person present, and some participants were interviewed with their child/ren present. No data was analysed from the support person or child/ren.

Open-ended questions and probes were used to allow participants to highlight their perspectives, experiences and describe strategies employed to provide food for their whānau. All interviews were digitally recorded and transcribed, with the participants' consent, and the interviews ranged between 46 and 69 minutes. An eleven-item sociodemographic questionnaire was completed by all the participants at the end of the interview to gather information about the participant characteristics and household composition. Each participant received a koha (gift) to acknowledge their time and contribution towards the research.

All interviews were digitally recorded and transcribed verbatim using a digital typing service (fidgety digits). Transcripts formed the basis of coding and classification of themes. All thematic analysis and data coding were conducted using NVivo software, after all interviews were completed.

Data was analysed using a general inductive approach to form main themes, sub themes and identify relative quotations (Bradley et al., 2007). JU and GK (who identify as Māori) inductively identified concepts and similar concepts were then grouped together into themes. The conceptual framework and data interpretation were independently reviewed by three authors (JU, GK, CW) to ensure that the themes reflected the full scope of the data and were consistent with the Māori world-view. Themes were refined through a series of discussions among the investigator team and all authors agreed on the final codes.

3.4 Results:

The 20 participants were aged from 21 to 39 years (mean age 31 years). Participant characteristics are presented in Table 3.2.

Households on average were made up of five members, range three to 13 members. The average food spend per person in the household per week was $34.67 and ranged from $12.50 to $62.50 between the households (Table 3.3).

Table 3.2: *Participant Characteristics*

Relationship Status	**N (%)**	**Age Range (years)**	**N (%)**	**Ethnicity**	**N (%)**	**Educational Qualifications**	**N (%)**
Single	5 (25.0)	20-24	5 (25.0)	Māori	20(100.0)	None	3 (15.0)
Living with partner	9 (45.0)	25-29	4 (20.0)	Pasifika	3 (15.0)	Secondary school	10 (50.0)
		30-34	4 (20.0)	NZ European	6 (30.0)		
Married	3 (15.0)	35-39	7			Post-secondary school	7 (35.0)
Other	3 (15.0)		(35.0)	Other	3 (15.0)		

Values are count (percent); Percentages may not always add up to 100% as participants may identify with more than one ethnicity

Table 3.3: *Household Characteristics*

Age Range (years)	**N (%)**	**Weekly Food Budget** ($)	**Household count** n (mean household members)	**Income Source (12 months)**	**N (%)**	**Gender** (household members)	**N (%)**
0-2	25 (24.0)	$51-100	1 (4)	Wages/Salary	17 (85.0)	Male	52 (50.0)
3-5	8 (7.7)	$101-150	5 (3.6)	Parental Leave	5 (25.0)	Female	52 (50.0)
6-12	21 (20.2)	$151-200	6 (4)	Welfare	16 (80.0)		
13-20	8 (7.7)	$201- 250	3 (6)	Other	10 (50.0)		
21-30	18 (17.3)	$250+	5 (8)				
31-40	18 (17.3)						
41+	6 (5.8)						

Values are count (percent); Percentages may not always add up to 100% as participants may have had multiple income sources

Three themes emerged from the thematic analysis of interviews

Theme 1: Ensuring the whānau is fed – "If it's cheap and filling, we'll get it"

Inexpensive carbohydrate-laden foods such as bread, pasta and noodles were consumed to ensure that everyone in the household was being filled.

"I mean, we've living on carbs. It's the cheapest thing there is, potatoes, rice, pasta, noodles, bread." (33-year-old, 3 children).

Participants reported that missing meals was not uncommon and breakfast was the meal mostly likely to be missed. This created stress for mothers when their child's food intake was compromised.

"Sometimes 'child's name' does have to go without a meal and he gets real antsy when he's hungry. And sometimes I just feel like locking myself in the bathroom and bawling my eyes out 'cause I don't know what to do." (21-year-old, 2 children).

The participants tended to prioritise feeding their children and partners over themselves and would choose to miss a meal if it ensured the rest of the whānau were fed.

"But I don't mind, I mean, they were happy and they love their dinner. I always know they're gonna say, oh, why aren't you eating? I just say I'm not hungry." (33-year-old, 3 children).

Food choices were heavily influenced by the price of food.

"The first thing I look at is the price, always. …it might not be healthier but it's cheaper and that's what I usually go for." (22-year-old, 2 children).

"Like, I know that a tin of baked beans is 50% sugar, but it's 70 cents. You can put it on a 99 cents loaf of bread and it's a meal… it doesn't matter how nice it is or yuck it is. If it's cheap and filling, we'll get it." (33-year-old, 3 children).

Variety in the diet was limited with the same foods being regularly consumed each week. Chicken was the protein source most likely to be consumed as it was an inexpensive option when compared to other meats.

"Generally, we have mince, chops, sausages and chicken. I buy a lot of chicken 'cause it's cheap and you can do a lot of things with it and the children are guaranteed to eat it." (35-year-old, 2 children).

Most participants discussed good cooking skills even if they had limited cooking facilities and food storage. Some were able to utilise the internet to support their cooking skills and feed their household.

"Sometimes I'll watch YouTube videos on how to make, that's how I taught myself how to make a chicken soup." (22-year-old, 2 children).

Many of the participants displayed good nutrition knowledge, were conscious of their vegetable and fruit intake and discussed good cooking techniques. However, they perceived the access to healthy food as being too expensive. They prioritised cost and taste of food as they knew this would ensure that everyone is fed.

"I know the nutrition side of things is like really important. But to tell you the truth I just, you know, their fed, their fed. You know. They're not gonna go hungry." (32-year-old, 8 children).

Participants highly valued eating together as a whānau and had a designated eating area for family meals within the home. Mealtimes were typically screen free and could include karakia before consuming a family meal.

"Because we don't have a table because there's nowhere to put one in this house the kids will pull out a blanket and they'll sit over here. And Mum will sit here, I'll sit over there and my partner will sit where you are, most of the time." (31-year-old, 3 children).

Theme 2: Accessing food from multiple avenues is a time-consuming journey

While participant's food access was influenced by a single supermarket monopolising the region, a host of alternative strategies were used to access food. Locally owned smaller greengrocers, butchers and markets were viewed as an option to purchase food but were often not accessed often due to transport costs and stress when children were present.

"Oh, I do occasionally go to Bells, but just when, on my shopping days, I've always got babies, …I just try and get it all at PAK'nSAVE so it's, yeah, so I can just come home (laughing)." (25-year-old, 3 children).

Participants were most likely to purchase food themselves and have their children with them. They were reliant on having their own transport to access food and shopped on the day and time that their income was received.

"Every Tuesday,…I'll try and get it all on Tuesday… I get paid around 6.30, but I'll go at, like, 5.30. That way I've got an hour to do shopping and then by the time that's, just so it's not too late with the kids." (25-year-old, 3 children).

Food grants and food banks were regularly accessed by most participants to ensure adequate food was available for their household. These supports were not always easy to access as they required an online application for food grants from Work and Income New Zealand[1] (WINZ) and a referral from an approved provider to access the food banks. Approval of food grants was also determined by previous frequency of access which could limit the ability for participants to gain a food grant. This required considerable time, resources, effort and stress for the participants to seek alternate ways to access food.

"I lost my job … and I ended up at Work and Income, actually before COVID happened. And then they helped me with food grants over the COVID period which put me in $500 deficit." (32-year-old, 8 children).

Community Facebook pages like "koha for kids" and community groups like "Feed My Lambs" supported twelve participants with food, free formula and nappies to enable increased funds for food purchases.

"I was really struggling with addiction and a lot of family issues … then I ended up going to jail when she was five months old. And while I was in jail, they were still supporting my family….clothes, food, they were still giving the formula, the nappies, the wipes….And, like, so when I came back and was on home detention, the first thing I said to my probation officer was,

[1] WINZ – Work and Income New Zealand is a central government department under the Ministry of Social Development. They are responsible for income support (e.g. unemployment and disabilities benefit), employment assistance and supporting employers of clients.

like, I wanna go back to Feed My Lambs because it's a healthy environment" (35-year-old, 2 children).

Educational providers made food available for children at school and other learning facilities and in some instances, food would be sent home with children to further provide for the household.

"I ask my kids all the time, what do youse have at school? They're like, oh man, we, like, make baked beans on toast and we have, they have all the snack stuff and we have heaps of different fruit. I'm like, so I could send you basically to school with no food if I wanted to? And they're like, yeah, we don't care, there's heaps at school." (39-year-old, 5 children).

Wider whānau support for many participants assisted to meet food access needs for households in the forms of direct access to food, extra money and supplies and shared meals.

"My mum's tree's always ready and my mum has heaps of gardens and so does my papa who lives in the next house. ……. We eat quite a lot of fish too because my brother likes fishing, so at least once a week we're having fish for dinner." (25-year-old, 1 child).

Community gardens and Pātaka kai (community pantries) in Kaitaia were not frequently accessed either due to lack of awareness or the assumption that food in Pātaka kai was meant for others. Participants did not hesitate to drop food off to Pātaka kai if they had anything excess in their own household.

"Oh, I didn't even know there was any, I didn't even know there was any community gardens (laughing)." (24-year-old, 2 children).

"I've donated to them, but I've never taken from them because I feel that there's other people who need them more." (35-year-old, 2 children).

Most participants engaged in wider skills to support food access needs that included collecting kaimoana (seafood), hunting, gathering and homekill meats.

"Yeah, I think it is important to us, especially we have pretty strong Māori background, my family and his family who did grow up with knowing about those kinds of things, mmm." (38-year-old, 5 children).

"It is and it's also teaching the kids you know, to live off the land." (32-year-old, 8 children).

Overall participants did not view themselves to be food insecure however the reality of having to rely on support systems to meet food access needs for their whānau did burden their resilience.

"If I had no money at all, then I usually would go to WINZ for, like, a food grant or something." (22-year-old, 2 children)

Theme 3: Coping with the unexpected and unplanned – being told "why didn't you see this coming"

Unexpected costs and events affected food access for the participants. Health issues, tangihanga (funeral), celebrations, COVID lockdown and unstable housing were often mentioned as influencing food access. Medical issues for both the participants and their children had an impact on meeting food access needs. The cost of accessing general practitioners and prescriptions impacted funds left for food as health needs are prioritised over feeding the household for that week.

"I mean, a few weeks ago, I ended up paying half my benefit to them, just for doctor fees and prescriptions. $50 in prescriptions and $150 for the doctor bill." (21-year-old, 2 children).

Skin conditions such as eczema and food intolerances added extra stress for five participants as they attempt to balance what they are able to afford and to meet their child's dietary needs.

"Oh, I've stopped giving her yoghurt now 'cause she gets eczema. Well generally I'd get the packs of yoghurt, like the cheaper fruit. I actually don't know how much coconut yoghurt is, but I know it's more expensive than what I would normally get." (23-year-old, 2 children).

More significant health issues which required travel to specialists out of Kaitaia and as far as Auckland incurred unexpected costs this impacted food access for the whole household as food funds had to redirected to pay for the costs of the immediate health costs.

"So like when I was down in Whangarei with him,…So I rung up WINZ 'cause I'd been in there for four days, to get a food grant. And they're like why? And I'm like well I'm stuck in hospital with my baby and my Mum's up at home with my other two kids, and I need to do shopping. They're like why do you need to do shopping? I'm like well I've got to pay for parking, the travel down here and to get home again. They're like so will you transfer the $200 over to your Mum? I was just like well yeah, but then I still need money to get home as well and it's not like they feed you very good down there." (31-year-old, 3 children).

Anxiety and depression also featured highly for four of the participants which effected their purchasing habits and capabilities. This left the mothers feeling inadequate and having to rely on others to assist with the food procurement.

"Yeah, it led me into depression, …. what kind of mother are you if you can't feed your kids?" (31-year-old, 2 children).

"I try and ask someone to come with me. So, my sister comes with me every Tuesday. I can't do it on my own, yeah." (25-year-old, 3 children)

Having to attend tangihanga added stress for participants due to the cost of travel and expectations to contribute financially to the funeral costs.

"Just this week,… I was away at my grandmother's tangi,…So that was a little bit tight on money in terms of having to pay for gas, and then my power bill came up. And then my internet, you know, it always comes up all at once, …But I just really try and cut down with what, like, I don't actually need in my shopping to help me get through." (24-year-old, 2 children).

Housing for many participants was unstable and they had resorted to shared housing arrangements to alleviate costs or they were living under threat of what the future held.

"Yeah, we're living with my parents at the moment. We've just got a lot of stuff going on, yeah." (36-year-old, 5 children).

Stable housing was often tenuous for the participants and this meant they were unable to set up a vegetable garden to support food access.

"So, we moved here and I was thinking we should just open a vegie garden, but they said no, I don't know why. Our property manager was, …she was like, no, sorry, no, no adding to the gardens or taking from them." (24-year-old, 2 children).

Emergency housing with inadequate communal kitchen facilities restricted the opportunity to feed the whānau for one participant. Emergency housing was only meant to be occupied for three months but with the increasing housing shortage, whānau were staying for much longer with restricted ability to cook.

"For the past year, seven months, we've been living here. So we moved in two weeks before my eldest was born ... 'Cause quite honestly, being here feels like being sick,... It starts the anxiety…We've only got that little grill and the electric frying pan…The only oven is up in the communal kitchen…they've locked all the kitchen utensils and all that." (21-year-old, 2 children)

Most participants have developed coping strategies to try and deal with the unplanned and unexpected but, they were living moment to moment. The food budget was often the only modifiable portion of their budget and so this was sacrificed to meet other more urgent needs. Having to access support systems to ensure everyone was feed became a necessity.

"I mean, you've still gotta give your entire private life story to get one (food grant). And even then, it's like, well, why didn't you see this coming? Why didn't you see this coming? We had, it was a few weeks ago, we had all the kids, one was going to camp and needed torches and sleeping bags and all the crap we don't have. And then the week after that, my eldest boy couldn't fit his uniform and something had broken and his shoes had fallen apart. And we had to replace those, and then it was the end of the month and all the end of the month bills went out. And then they're going, well, why didn't you see the end of the month bills coming? And I said, I did, but it's not like youse are giving me money to save up for them, I'm living week to week to week. But they assume that the money they give us we have a savings account just building up all this money, and we're not." (33-year-old, 3 children)

3.5 Discussion:

Twenty Māori mothers from the far north of New Zealand engaged in this study, of whom 25% were sole parents. Their household sizes ranged from three to 13 and most (80%) received some form of welfare payment. Eligible participants were female, Māori and with young children since they are disproportionately represented in food insecure environments (Bowers et al., 2009; Carter et al., 2010; Lanumata et al., 2008; Ministry of Health, 2019; Perry, 2019). Although all the Māori mothers shared their personal experiences of compromised meals for their whānau due to not being able to afford enough food, they did not perceive themselves or their whānau to be food insecure.

Participants described the negative impacts of having insufficient food to feed their families on their health and wellbeing such as stress, anxiety and depression. Previously, psychological distress has been reported among food insecure respondents in findings from the Survey of Families, Income and Employment (SoFIE) (Carter et al., 2011). Respondents were classified as food insecure if, in the last 12 months, they used special food grants/banks, had to buy cheaper food to pay for other things or went without fresh fruit and vegetables often. Māori mothers in the current study employed resourceful mechanisms to reduce the severity and impact of food insecurity such as sourcing kai from whānau and community groups, fishing and diving, seeking support from social services and educational providers (schools, day care, kohanga reo) for their families.

From the in-depth interviews three key themes emerged from the analysis which highlight the strategies employed by the mothers to feed their whānau. Firstly, as a priority "Ensuring the whānau is fed – "*If it's cheap and filling, we'll get it"*, secondly Māori mothers described accessing food from multiple avenues as a time-consuming journey and thirdly the need to "Cope with the unexpected and unplanned and – being told *"why didn't you see this coming""*. Unique and specific to these participants was the importance of connection, and this was reiterated across all three themes.

The connection to the strength and value of whānau support was prime and is supported by findings in previous studies among food insecure Māori (Beavis et al., 2019; Carter et al., 2010; Graham et al., 2018b; McKerchar et al., 2015). The strategies Māori mothers employed were more effective when connections were stronger among whānau relationships and when they could support each other. The access to rural environs by whānau was particularly useful to access gardens or by fishing and diving. However, for some this avenue was not reliable or

comprehensive and other connections such as community groups were needed to be accessed for food to be sourced.

In addition to community support groups, connection to educational institutions and government sponsored agencies like Work and Income New Zealand supported the journey to access food. Food sharing among community groups and whānau (manaakitanga - generosity) enhanced cultural connectivity, as it supports key Māori values such as aroha (love) and whānaungatanga (relationships and connection) (Beavis et al., 2019; McKerchar et al., 2015; Moeke-Pickering et al., 2015).

Finally, being digitally connected allowed Māori mothers to access social supports by the way of food grants, Facebook groups such as "koha for kids" which provides donated food from the community and to search for simple recipes and meal ideas using YouTube. Internet access also enabled access to WINZ food grants which are more readily available online. Social connection is important in both a physical and virtual sense and without connection depression, anxiety and social isolation can occur which negatively impact on health and wellbeing (Carter et al., 2011; Rajaratnam et al., 2008).

The priority theme of "Ensuring the whānau is fed – if it's cheap and filling, we'll get it" meant the mothers would sometimes skip breakfast and defer to the preferences of others in her whānau to make sure that their food needs were met. Practices such as mothers missing breakfast and going without food have previously been reported among low-income mothers (Rosa et al., 2018). Food selection based on cost is also not uncommon and has been reported by Māori mothers and low income, ethnic minority and female-headed households (Beavis et al., 2019; Graham et al., 2018b). Participants will adopt these coping strategies to ensure that the whānau is fed (Arlinghaus & Laska, 2021; Nettle & Bateson, 2019), as whānau this is the key priority for these mothers. Despite nutrition literacy often cited as being low in this population (Lanumata et al., 2008), the interviewees indicated that this was not the case. They were very much aware that inexpensive purchases often meant poor nutrition, however, as for many women in this situation, staving off hunger for the lowest price is the driving factor (Carter et al., 2010). Ultimately the priority is to get everyone fed. Participant's awareness of nutritional needs of household members may be an indication that health promotion is making a difference, however having good nutrition literacy in the absence of adequate disposable income was not sufficient to enable mothers to purchase healthy food.

A further theme from the mothers' interviews was the time-consuming effort required to access food from multiple avenues. Most participants regularly accessed food with the support of

WINZ food grants, use of local food banks, community groups such as Feed my Lambs and educational providers such as early childhood centres or schools. This took considerable time compared to a visit to the supermarket. Furthermore, the mothers usually had to take their children with them as they were too young to be left at home alone. This further complicated the journey with inevitable challenges associated with accessing the internet, making phone calls and attending meetings. The time commitment, pressure and strain of dealing with processes or navigating an increasingly uncaring and punitive welfare system has been previously described among Māori households and young Māori mothers who suffer from insecure work and unemployment, as well as housing and food insecurities (King et al., 2017; Rosenberg, 2018). Young Māori mothers have described these time-consuming encounters as judgemental further adding to their frustration and constraining their access to welfare supports (Cram et al., 2021).

The final theme was the need to cope with the unexpected and unplanned and – being told "why didn't you see this coming". Coping with unplanned and unexpected costs related to medical issues or clothing for children or events such as funerals meant that when these occurred, participants felt they had to deal with them immediately. Food purchase was the obvious sacrifice in the absence of any financial flexibility to support unpredictable costs. In these circumstances the participants described being very anxious and depressed and they were aware a lack of healthy food would have a negative bearing on the health and wellbeing of their whānau (Carter et al., 2011; Graham et al., 2018b; Utter et al., 2018). Participants who were well connected to whānau and community were better able to bear the burden of unexpected and unplanned events as they had support systems to help them cope and enable them to remain food secure.

Limitations of this study were that the participants were recruited only from the Kaitaia region. However, this region represents a vulnerable population due to socioeconomic hardship. Thus, the study population is also a strength of the study because it represents food insecure Māori mothers. We make no claims to generalisability. The qualitative research design may allow for transferability of study findings, which may be applicable in other contexts, situations, times and populations. It is possible that self-selection of participants may have occurred, and the recruited participants may be more keenly interested in nutrition, however participants experienced difficulty with feeding their whānau and were able to share their experiences.

Young, adults, women and Māori in New Zealand are more likely to be food insecure, this study has shown that food resilience of Māori mothers is maintained by a tenuous thread. That thread is strengthened by their connection to their extended family, community, and their ingenuity

in sourcing food for their family. Food insecurity at the level of these participants meant that nutrition literacy was negated, and sating hunger was a priority. The complexity of accessing food from multiple sources, when food insecure, was heightened for some mothers when there was a lack of support from family and community including government support agencies such as WINZ. Being well connected is pivotal for Māori mothers to be able to meet food access needs for their whānau but this connection can only do so much. Despite warning signs two decades ago (Parnell et al., 2001) food insecurity in New Zealand has become more severe and remains inequitable. Further research, for Māori women is needed to better understand and address the impacts and severity of food insecurity in a high-income food-producing nation like New Zealand.

Author Information:

Joanne Urlich, Whakapiri Ora Manager, Te Hiku Hauora, Kaitaia, New Zealand

Geoff Kira, Senior Lecturer, School of Health Science, Massey University, Palmerston North, New Zealand

Carol Wham, Professor of Public Health Nutrition, Massey University, Albany, New Zealand

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Correspondence:

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Chapter 4: Conclusion and Recommendations

4.1 Brief Overview

This study aimed to investigate the perspectives and experiences of Māori mothers in Kaitaia and their strategies to meet food access needs for their whānau. In-depth unstructured interviews about dietary habits, eating routines, procurement of food, nutrition skills, nutrition knowledge and perceptions of food access were used to discover themes which influenced food access. It was found Māori mothers prioritise feeding their whānau by accessing supports outside of their own income to ensure the whānau is fed. Māori mothers in Kaitaia are impacted by external factors that influence food access needs, they employ strategies such as seeking social supports and relying on wider whānau to ensure their whānau is fed. Support systems were conditional and not always easily accessed making it a journey to meet food needs. The participants displayed good nutrition literacy and cooking skills but were often unable to eat a healthy diet they desired due to limited income. Māori mothers placed value on eating together as a whānau, accessing traditional foods, celebrating with food and involving the wider whānau as part of their food access. It was found that being well-connected to whānau, community groups, support services and having online digital access was pivotal for Māori mothers to be able to meet the whānau food needs.

4.2 New Knowledge Generated and Contribution to Health

The study findings align with previous research which has investigated food security issues for low-income mothers and families, where poverty is a driving factor to food access needs. Lack of income influences food choice that prioritises being fed and the need to access support systems such as food grants and food banks to meet whānau food needs (Beavis et al., 2019; Carter et al., 2010; Graham et al., 2018a, 2018b; McKerchar et al., 2015; Rush, 2019). Findings highlight the value of whānau connection and their support to reduce food insecurity.

Māori mothers confirmed their current income levels were insufficient to ensure that they are able to adequately meet basic food needs for themselves and their families. Hence food access is compromised to meet other basic needs such as housing and health care costs. Participants demonstrated an understanding of what they should be eating for health and wellbeing. However, due to a lack of income the ability to implement a healthy diet is unattainable due to lack of income. Participants described how they would ensure the whānau was fed and that cheap and filling foods were purchased to achieve this.

Gaining insight to the greater impact of food insecurity beyond keeping whānau fed is likely to impact their wellbeing, increases stress, anxiety and depression for mothers as they attempt to

meet the whānau needs (Carter et al., 2011). Food insecurity research often looks at the direct and immediate impacts of food insecurity but of greater concern is the long-term health impacts of food insecurity both physically, mentally and emotionally to mothers as the food providers and their whānau therefore food security needs to be addressed to reduce negative impacts to both health and wellbeing for those who experience food insecurity such obesity, cardiovascular disease, diabetes, cancer, stress, anxiety and depression (Mello et al., 2010; Ministry of Health, 2019; Utter et al., 2018). Participants described how food procurement was a time-consuming journey which increased their stress and anxiety levels, leaving them feeling depressed and stigmatised about what was required for them to access food for their whānau. Participants also discussed how unexpected and unplanned circumstances added further stress to their lives. Gaining support from whānau and community groups tended to alleviate the stress and pressure of food procurement, highlighting the importance of Māori mothers being well-connected.

4.3 Strengths of the Study

A major strength of this study is the focus on Māori mothers as they are a minority population in New Zealand that will most likely be affected by food insecurity. The evidence may assist to support future recommendations which can help to reduce current inequities experienced by Māori with respect to food access needs. Conducting in-depth unstructured interviews face to face also allowed for comprehensive qualitative findings to be discovered beyond quantitative dietary assessment of food habits. Participants shared in detail their experiences to bring into sharp relief the reality of their lives to meet food access needs for their whānau. Unexpectedly, this research occurred during the COVID-19 pandemic which highlighted how this unique lifetime event further increased food access needs. The pandemic made access to supermarkets harder for those who were sole parents of children as they could not take children grocery shopping with them, food support from educational providers was no longer available during the lockdown period and access to food grants and food banks required phone and internet access. During the COVID-19 lockdown period communities such as iwi and Māori health providers mobilised to support food access needs for their most vulnerable populations with door-to-door delivery of food parcels. This was contingent on the food parcel providers knowing that household needed support, highlighting the importance of Māori mothers being well-connected in order to meet their whānau food needs.

4.4 Limitations of the Study

This study focused on a specific rural region which experiences high levels of socio-economic deprivation. The focus was on mothers who are commonly food providers and carers, who were

also Māori which limits the generalisation of the findings. However, it is expected that similar findings may be found in similar socioeconomically deprived regions (Graham et al., 2018b; Moeke-Pickering et al., 2015).

This study was also limited by the age of the participants having at least one child aged between 0-2years. Future research may find food insecurity experiences differ when considering parents of older children. Participants with older children as part of their household were having to address feeding children who attended school in addition to related costs such as uniforms and school trips. They may have different food outcomes and needs as the food budget may be reduced to meet schooling costs, unlike the participants with only preschool children. All participants still experienced food security issues but without the added burden of school and social expectations and stigma that were experienced by older children.

Support from community groups like “Feed my Lambs” is only available to mothers until their child starts school, which may place further stress on households with older children once that support system is removed.

4.5 Recommendations for Further Research

This study identified food insecurity is a reality for Māori mothers and opportunities exists to alleviate these experiences and provide support for improved food security status. With respect to food security, the statement “prevention is better than cure, action is required now” (Parnell et al., 2001), is still relevant to the present. Action-orientated initiatives are needed urgently in order to make impact to the food security status in Aotearoa: the land of plenty.

Food insecurity has been widely researched globally, but to date there is very little New Zealand research that has been reported, particularly among Māori mothers who are at the highest risk of being food insecure (Carter et al., 2010; Ministry of Health, 2019). Many New Zealanders may be unaware of the realities of food insecurity for a significant (19%) part of the population, until the realities of food insecurity in New Zealand are widely known, the status quo will remain and food security status of Māori mothers will not improve. Further studies are required to understand the complexities of New Zealand food security as our historical, cultural and social differences are unique to this country. These further studies will also assist in highlighting the prevalence, reality and impacts of food insecurity in a country that has the ability to be food secure for all and produces enough food to feed 20 million people every year (Rush, 2019).

Findings from this study highlight the complexities of accessing support systems and initiatives which have been designed to alleviate food access. Many of the current national supports such

as food grants and food banks have significant stigma attached to access, and those who attempt to access can experience this implicit bias.

Investigation needs to be conducted around what strategies and supports will actually make a difference to food security for our most at-risk vulnerable populations without placing increased pressure and burden on them or unintentional harm including stress, anxiety and depression.

Consideration also needs to be given to the process of accessing food grants, food banks, food via community groups such as “Feed my Lambs” and supports such as relying on wider whānau to support with food to ensure food is accessed for whānau. These food dependent systems which have been created to meet the immediate material needs of those who are experiencing food insecurity due to poverty, are still conditional and temporary. They do not support Māori mothers to become food secure but rather alleviate the immediate situation. Employing strategies which empower Māori mothers to meet their whānau food access needs, empowers the whole whānau. Such an approach is more sustainable and provides a positive long-term intergenerational impact.

By policy makers leading the change to improve food security, systems can be adapted to move from temporary food access to food secure environments. Looking for sustainable solutions that will grow food security, achieve food sovereignty and inspire hope for Māori mothers and their whānau. Food security is more than just having enough affordable food. It is about having a resilient community, adequate housing and income, access to land and the ability to grow food to feed one’s own whānau. Food should bring joy to Māori mothers and their whānau, a food secure environment would enable this to be possible.

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Appendices

Appendix A: Participant Information Sheet

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

Participant Information Sheet

Researcher Introduction

The research will be conducted by Joanne (Jo) Urlich who is currently completing her Master in Human Nutrition at Massey University.

Joanne currently works as the Whakapiri Ora – Community Outreach Services Manager, for Te Hiku Hauora. Her role focuses on reducing the equity gap for Māori for improved health and wellbeing.

Joanne is the mother of four young children and highly passionate about nutrition and wellbeing for all.

She will be supported in the research by Massey University Staff and resources.

Study Summary

You have been invited to participate in this study, because you are Mother of a child/ren aged between zero to two years old, who identifies as being Māori and lives in the Kaitaia region. This study will involve a face-to-face conversation where you will be invited to discuss your perspectives and experiences about food access, preparation and consumption needs for your whānau.

The Research Procedure

If you agree to participate in the study, the following will occur:

1. Once you have signed the consent form, your sociodemographic data will be recorded together with your household status.

You will be invited to have a conversation with a Massey University masters student who is undertaking research about the food access needs of whānau. This is to gain your individual perspectives and experiences which will be combined with the experiences of others. There are no right or wrong responses; we are keen to learn what strategies you use to meet food access needs.

2. This one-off visit will take approximately 60 minutes; however, you may withdraw from the study within 3 months after the completion of the interview.

Study Inclusion Criteria

To be eligible to participate in this study, one has to be:

1. Be a mother of child/ren aged between zero to two years
2. Be 18 years or older
3. Living in the Kaitaia region
4. Identify as being Māori
5. May have previously accessed food banks or food grants
6. Comfortable to use English language throughout the conversation
7. Willing and able to provide written consent (attached)

Benefits and Risks

You will have an opportunity to share your perspectives and experiences on this topic. There may be no other direct benefits for participating in this study. However, your participation in this study will potentially help to inform future services and interventions.

No risks or harm is anticipated. No invasive measures will be undertaken that could cause harm. The conversation will be very casual and you are free to decline discussing any matter.

Participant's Rights

You do not have to accept this invitation. If you decide to participate, you have the right to:

- Decline to respond to any particular item

- Withdraw from the study up to 3 months once your interview has been completed and at any time prior to this.

- Ask any questions about the study at any time

- Be given a summary of the study findings when it is concluded

- Have a support person of your choice, present with you during the interview if you wish

- If you wish to read and review a copy of your transcript from your interview you will be able to do this within a 2-week period after you interview.

Choosing not to participate in this study will in no way affect your current or future care

Confidentiality

Only investigators of the study will have access to all the information collected during the interview. The interviews will be recorded, as the researcher may fail to capture everything you discuss during the interview. The recordings and all other collected data will be held securely and treated strictly confidential.

Results of this study may be published or presented at conferences or seminars; however, no individual will be able to be identified. Research data will be stored for a period of six years, after which it will be destroyed.

Results

If requested, you will be offered copies of the publications that arise from this research. However, you should be aware that a significant delay may occur between completion of data collection and completion of the final report.

Ethics Approval

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application NOR20/17. If you have any concerns about the conduct of this research, please contact Dr Fiona Te Momo, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 43347, email humanethicsnorth@massey.ac.nz.

Further Information

If you have any questions, concerns or complaints about the study at any stage, you can contact any of the following:

❖ **Joanne Urlich, Researcher**

Masters Candidate, Nutrition Sciences

College of Health,

Massey University

021 421 627 or joanneu@hauora.net.nz

❖ **Geoff Kira, PhD**

Senior Lecturer, School of Health Sciences, Massey University

g.kira@massey.ac.nz

❖ **Carol Wham, PhD**

Professor of Public Health Nutrition,

College of Health, Massey University, c.a.wham@massey.ac.nz

Appendix B: Participant Consent Form

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

Consent Form

Declaration by participant:

I have read the Information Sheet and have had the details of the study explained to me. I have had time to consider whether to take part in this study. I have been given appropriate contact details to obtain further information and to discuss the study. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given a copy of the Information sheet to keep.

…….

Participant's name: **Signature** **Date**

Declaration by member of research team:

I have given a verbal explanation of the research study to the participant, and have answered the participant's questions about it. I believe that the participant understands the study and has been given informed consent to participate.

…….

Researcher's name: **Signature** **Date**

Appendix C: Study Invitation Poster

Appendix D: Participant Questionnaire

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

Participant Questionnaire

Introduction: Before we begin, please can you share some collect some basic background information?

1. Firstly, what is your year of birth?

2. What is your gender?

3. How many people in each of the following age ranges of the people in your household?
   - 0 – 2 years _____
   - 2 -5 years _____
   - 6 -12 years_____
   - 13 -20 years_____
   - 21 -30 years_____
   - 31 -40 years_____
   - 41 -50 years_____
   - 51 -60 years_____
   - 60years +_____

4. How many of each gender make up your household?
   Male _____
   Female _____
   Other _____

5. Which ethnic group or groups do you belong to or identify with?
   - Māori
   - New Zealand European
   - Pasifika
   - Other _____

8. What is your relationship status?
    - Single
    - Living with partner
    - Living without partner
    - Married
    - Separated/ Divorced
    - Other_____

9. What is your highest educational qualification?

10. In the last 12 months, how did your household receive income?

11. How much does your household spend each week on food?
    - $0
    - $1 - $50
    - $51 - $100
    - $101 - $150
    - $151 - $200
    - $201 - $250
    - Over $250

- **Joanne Urlich, Researcher**

  Masters Candidate, Nutrition Sciences, College of Health, Massey University

  021 421 627 or joanneu@hauora.net.nz

- **Carol Wham, PhD**

  Professor of Nutrition and Dietetics, College of Health, Massey University,

  c.a.wham@massey.ac.nz

- **Geoff Kira, PhD**

  Senior Lecturer, School of Health Sciences, Massey University

  g.kira@massey.ac.nz

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committees:

Northern, Application NOR 20/17. If you have any concerns about the conduct of this research, please phone contact Dr Fiona Te Momo, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 ext 43347, email humanethicsnorthern@massey.ac.nz

Appendix E: Interview Schedule

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

Interview Schedule

Interview Number	Name	Interview Address	Interview Date	Interview Time	Interview Completed
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Researchers Contact Details:

Joanne Urlich
joanneu@hauora.net.nz
021 421 627

The researcher will ensure that all interviews are conducted in day light hours and that cell phone is always on hand and remains in cell phone reception area. Supervisors will have copies of the completed interview schedule prior to the first interview being conducted.

Appendix F: Moderators Guide

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

Moderators Guide

Inquiry Logic: The interview topics and questions seek to identify how current & previous experience affect ability to meet food access needs and strategies employed to meet food access needs

6. **Eating Routines/ Habits**
    a. Please can you tell us who is in your whānau household
    b. What can you tell us about the usual food intake for your whānau
    c. For example, your daily eating routine
        i. Who
        ii. What
        iii. How
    d. What is the variety like in your diet?
    e. For the members of your whānau please can you describe
        i. Types of food and drink consumed
            1. Include tea, coffee, alcohol, water, milk
        ii. Frequency of meals/snacks
        iii. Eating arrangements e.g., as a whānau, kids separately, wider social groups, eating at the table, in front of TV
7. **Individual Circumstances**
    a. Can you tell us about how you usually shop/ source kai
        i. Where
        ii. When
        iii. How often
        iv. Who with
    b. What can you tell us about factors that are not in your control that affect the types of food that you select for your whānau
    Prompts:
        i. Price
        ii. Access,

iii. transport,
iv. locations

c. How do you choose which vegetables, fruit, meat you buy
d. Are there any other means of accessing food for your household, that you know of, have you accessed and do you know how to access
   Prompts:
   e.g., whānau, food banks, food grants, pātaka kai, community gardens, community groups
e. Do you ever feel stressed about not being able to access food for your whānau needs, and in what ways
f. How does the stress of having to meet food needs impact the people in your household
g. How are the kids impacted by having to access supports, do they feel
h. If whānau not living with you offer support, how does this impact for them
i. How does ECC or school support with access to kai for your whānau
j. In terms of your weekly budget, where does food place in terms of priority

8. Nutrition Knowledge & Skills

a. Can you tell us how important the nutrition content of food is for the food that you purchase,
   Prompts:
   - Breakfast foods
   - Lunch Foods
   - Dinner Foods
   - Snack Foods

   Prompts:
   i. What foods/meals/for whom
b. What is the priority for you when choosing foods to purchase, what factors do you consider
c. What are the main factors affecting food choice
   Taste,
   Cost,
   Health,
   Cooking skills/facilities
   Wider skills e.g., gardening, fishing, home kill meat

9. Perceptions & Values placed on healthy eating

a. Do you often skip meals,
b. Which meals do you skip/miss
c. What foods do you worry about whānau going without

d. What food groups do you going without
    i. Vegetables and Fruit
    ii. Milk and milk products
    iii. Breads and cereals
    iv. Meat, poultry, eggs, fish
e. What foods are the priority for you as a whānau to access
    i. Adults, kids
f. How important is it for your whānau to access traditional kai
g. How important is it for your whānau to celebrate with food e.g., birthdays
    i. Is it an added pressure, do you feel stressed?
    ii. Does it influence what foods are purchased/consumed?
    iii. How do you plan/prepare for these events?
h. How did /has COVID19 have impact for your whānau being able to access kai
i. What do you think would help to improve access to foods for your whānau

Please note: *this is an interview guide for the topics to be covered in the interviews. Wording of questions will not be specific as it will allow for participants to share their perspectives and experiences and strategies for food access needs being met for their whānau. It is to give the researcher prompts as they progress through the interview.*

Researchers Contact Details:

Joanne Urlich
021 421 627

The researcher will ensure that all interviews are conducted in day light hours and that cell phone is always on hand and remains in cell phone reception area. Supervisors will have copies of the completed interview schedule prior to the first interview being conducted.

Appendix G: Letter of Request to Institution

Letter of Request to Health Providers

We are researchers from Massey University with expertise in public health nutrition and Māori health research.

We plan to conduct a study in Kaitaia to investigate the perspectives and experiences of Māori mothers and their strategies to meet food access needs for their whānau. The main outcomes expected through this research are:

1. To inform the supports and services needed, that are culturally aware and responsive to Māori needs in the region. The dissemination of findings of this study will add to the body of evidence to help address equity issues and for funding to be directed into supports and services which would be of most value to this population.
2. To take the precious taonga that these mothers share to inform policy makers about what is really needed to address food insecurity among this population.
3. To privilege the voices of these mothers to service providers to empower their whakaaro about their own capabilities and capacity to care for their tamariki.

Participant Recruitment: We will work with community providers like yourselves in the Kaitaia region to identify potential participants who may be interested in participating in this research.

Joanne Urlich, will interview participants in a setting that is best suited to the participant for approximately 60-minutes to explore their perspectives, experiences and strategies used to meet food access needs. We would welcome your guidance on potential participants to invite into the study.

A poster is available for you to share out or place up in your provider facilities to communicate information about the study. Please find attached at the end of this letter.

Data collection will occur between July to September 2020.

Project Procedures and Participant Involvement – Health Providers

A face to face meeting will be held with the appropriate staff members of your organisation to further explain the research and how they may identify potential participants and communicate information about the study.

Project Procedures and Participant Involvement – Mothers

Joanne Urlich will make contact with the potential participants. Eligibility criteria will include:

1. Do they identify as being Māori?
2. Are they a mother to a child/ren aged between zero and two years of age?
3. Are they 18 years or older?
4. Do they reside in the Kaitaia district?
5. Have they accessed food banks or grants previously?

Once eligibility has been established, an interview date, time and location will be agreed upon.

Prior to the interview being conducted a Participant Information Sheet will be provided and explained to the participant. A consent form will need to be signed to for participation in the study.

The interview will take approximately 60-minutes, participants will be welcome to have support person present if they desire. Using an interview guide we will look at perspectives and experiences and strategies employed to meet food access needs by the participant. A questionnaire to identify sociodemographic characteristics will be provided to the participants before the interview commences. As a token of our appreciation, women who participate in

this study will be given a koha of a kai kete for sharing their knowledge, views and time towards the study.

Data Analysis: Thematic content analysis will be conducted to identify emerging themes from the participants experiences and strategies. Qualitative narrative data collected will be disseminated to the participants and health providers. Participants will remain anonymous in all reported and published results of this study.

Participant Rights: Participants are under no obligation to accept this invitation. Should they wish to choose to participate, they have the right to; decline to answer any particular question, withdraw from the study at any time, even after they have signed a consent form (if they choose to withdraw, they will not be able to withdraw their data from the analysis after the data collection has been completed), ask any questions about the study at any time during participation, provide information on the understanding that their name or the names of their whānau will not be used in any publication and be given access to a summary of the project findings when it is concluded if they request them.

How to Participate: Contact Joanne Urlich by email on joanneu@hauora.net.nz

Good Practice and Cultural Safety for Massey University Research:

Geoff Kira is an experienced Senior Māori Researcher and he will be continually supporting this research throughout the whole period. Joanne Urlich is an employee of a Māori Health Provider and has whakapapa to Ngāti Kahu. We have considered the inclusion of Māori and indigenous values and concepts, allowing for the use of whānau support and appropriate Māori protocols. We acknowledge the concept of Manaakitanga, respecting the participants inherent dignity and acting in a caring manner towards them by way of; taking full responsibility to perform research in a safe and ethical manner (aroha), providing the participant with all of the critical information regarding the study in a clear way, so that they can make informed decisions (tūmanako and whakapono), an awareness of the cultural significance and sensitivity for a culturally safe implementation of the study (māhaki) and respect for the privacy and confidentiality of Māori participants.

Confidentiality:

All data collected will be used solely for evaluation and research purposes. Results may be presented at conferences and submitted for publication in journals. All personal information will be kept confidentially by assigning numbers to each participant. No names will be visible on any papers on which you provide information. All data/information will be dealt with confidentially and will be stored in a secure location for six years following the completion of the study at Massey University Albany Campus.

Project Contacts:

If you have any questions regarding this study, please do not hesitate to contact either of the following people for assistance

Joanne Urlich, Researcher; Masters Candidate, Nutrition Sciences, College of Health, Massey University, 021 421 627 or joanneu@hauora.net.nz

Carol Wham, PhD; Professor of Public Health Nutrition, College of Health, Massey University, c.a.wham@massey.ac.nz

Geoff Kira, PhD; Senior Lecturer, School of Health Sciences, Massey University, g.kira@massey.ac.nz

Committee Approval Statement

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Appendix H: Transcriber Confidentiality Agreement

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

TRANSCRIBER'S CONFIDENTIALITY AGREEMENT

I ..... (Full Name - printed) agree to transcribe the recordings provided to me.

I agree to keep confidential all the information provided to me.

I will not make any copies of the transcripts or keep any record of them, other than those required for the project.

Signature: ..... **Date:** .....

Appendix I: Transcript Release Authority

Exploring Perspectives and Experiences of Māori Mothers in Kaitaia and Their Strategies to Meet Food Access Needs for Their Whānau

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I confirm that I have had the opportunity to read and amend the transcript of the interview(s) conducted with me.

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature: ..... **Date:** .....

Full Name - printed .....