

## ORIGINAL RESEARCH

## Exploration of Māori household experiences of food insecurity

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Food security is defined as ‘the availability of nutritionally adequate and safe foods, and the ability to obtain these foods in socially acceptable ways’.<sup>1,2</sup> Food insecurity exists when this access is limited, uncertain or compromised. In New Zealand, food insecurity is associated with dietary patterns, such as inadequate fruit and vegetable consumption and frequent fatty processed meat consumption,<sup>3</sup> which may increase risk of cardiovascular diseases and obesity.<sup>4,5</sup> In New Zealand, household income is a key determinant of food insecurity.<sup>6</sup>

The current income inequality between Māori and non-Māori has been shaped by historical factors.<sup>7</sup> The most commonly understood factor is the dispossession of almost 95% of land and resources following European colonisation post-1840.<sup>8</sup> Lack of land to sustain a growing population contributed to the migration of large numbers of Māori to cities, and participation in the wage economy.<sup>9</sup> However, this left Māori vulnerable to the economic restructuring that began in 1984 and continued through the 1990s, resulting in significant job losses in areas where Māori predominated.<sup>10</sup> While Māori unemployment rates have improved since the peak of 27.3% in 1992,<sup>9,10</sup> there are still widespread employment disparities in New Zealand by ethnicity<sup>11</sup> and this impacts household income.<sup>7</sup>

Since the 1990s, the Treaty settlement process has been an important form of redress for past land alienation. While there is a narrative in the media about ‘Māori privilege’,<sup>12</sup> in part due to articles about Iwi receiving ‘handouts’, the reality is, the quantum paid to Iwi is small in proportion to the value of land originally taken.<sup>13</sup> Even if this was distributed evenly throughout the Māori

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population, it is not enough to significantly impact on income inequality.<sup>9,14</sup>

Today, one in four Māori adults (23%) and children (28%) live in income-poor households.<sup>7</sup> These households struggle to meet basic material needs, including adequate food/nutrition, adequate housing, suitable clothes and shoes, and required dental and medical care.<sup>7</sup> Constrained food budgets limit healthy food purchases. In 2011, it was estimated that low-income families, living in the Wellington region, would need to spend approximately 43–89% of their income, after rent, in order to afford basic foods to meet the New Zealand food and nutrition guidelines.<sup>15</sup> This is unaffordable for many low-income families, who find themselves in the predicament of needing to rely on others for food or money for food (food insecurity indicators<sup>3</sup>). Charitable organisations report growing demand for food parcels,<sup>16</sup> indicating significant unmet need for this basic necessity of life.

The current prevalence of Māori households in New Zealand with food insecurity is unknown, but increasing prevalence was observed between 1997 and 2008/2009.<sup>17</sup> In 2008/2009, two-thirds of Māori households experienced some degree of food insecurity, and Māori households were twice as likely as non-Māori to be food insecure.<sup>17</sup> A significant proportion of Māori women (32.6%), often or sometimes, feel stressed because they do not have enough money for food and they cannot provide the food they want for social occasions (31.4%).<sup>18</sup>

As described by Durie, *Te Ao Māori* (Māori worldview) is both holistic and cyclic.<sup>19</sup> This worldview holds that every person is connected both physically and spiritually through *whakapapa* (genealogy) and the strength of the collective determines success.<sup>19,20</sup> These beliefs influence *hauora*. *Hauora* is a unique multidimensional concept that encompasses *taha tinana* (physical well-being), *taha hinengaro* (mental and emotional well-being), *taha whānau* (social well-being) and *taha wairua* (spiritual well-being); and if one aspect falters, then overall health is compromised.<sup>19</sup> To fully express significant cultural values and gain *hauora* benefits, Māori households need to be food secure.

This research explores how food insecurity was experienced in Māori households, and how this can affect *hauora*. Ethnographic-style research techniques, based on observation and dialogue, were used to gain insights into complex household food cultures.

## Methods

Four Māori households (18 individuals) participated in a 2011 adapted-ethnographic study to explore factors that influence fruit and vegetable consumption in low- and high-income households.<sup>21</sup> New Zealand participants were selected using a maximum variation purposive sampling method, based on household income and composition (number of adults/children, child age). A Māori dietitian and Māori field researcher recruited specific types of households from personal networks to safeguard field researchers.

Each household received a free box of fruits and vegetables each week for 12 weeks.

Two trained Māori field researchers (female postgraduate dietetic students) were assigned two households each. The Māori field researcher visited each household twice a week for 3 months and documented over 40 hours of observations and discussions using annotated field notes (including annotated photographs) and transcribed audio recordings of interview-style discussions. At the end of each visit, the field researcher met with participants to discuss the day's findings, checking for accuracy and differing perspectives to inform field note annotations. During the first month, field researchers built rapport with households, collected demographic information, observed the home food environment, and interviewed nutrition gatekeepers regarding the household's food culture. Over the remaining 2 months, ad-lib support and advice were offered to overcome perceived and observed barriers to healthy eating, allowing fresh insights into household food choice motives and dietary and cultural practices. The main findings of this research were published by Carty *et al.*,<sup>21</sup> however, the specific experience of Māori households in relation to food insecurity was not investigated.

In the present study, the experiences of Māori households in relation to food insecurity were explored. Rich observational and discussion data from the 3-month ethnographic-style study in 2011 were examined. Households that reported relying on others for food or money for food in the last 12 months were classified as food insecure.<sup>3,17</sup> Research protocols were approved by the University of Otago Human Ethics Committee (10/241, D16/348), and written informed consent was obtained from participants, aged 5 or more years, or parents (children under 5 years).

While the 2011 study was non-Māori initiated, the present research was Māori-centred<sup>22</sup> (three of four authors are Māori) with an aim to support Māori health. It was informed by *Kaupapa Māori* research theory, which privileges Māori experiences, views and beliefs,<sup>23–25</sup> and critical theory, seeking to analyse societal structures that impact individual outcomes.<sup>23,26</sup> This Māori-centred approach aligned the research with *Kaupapa Māori* research principles, but it is not *Kaupapa Māori* research because the initial study was not Māori initiated or led.<sup>22</sup>

Inductive thematic analysis techniques were used to explore food insecurity experiences. After allocating fictitious names, annotated field notes, including text-based photograph annotations, and transcripts were intensively examined and read repeatedly.<sup>27</sup> Next, data-driven descriptive codes were assigned to segments of text from these documents using MAXQDA software (2012, VERBI Software-Consult-Sozialforschung GmbH, Berlin, Germany). The coding framework was modified as new insights developed. Several themes initially emerged from the data; these were further organised and refined into four overarching themes, selected through an iterative discussion process with the research team (four authors, including one Māori field researcher in 2011). Selected text for themes revealed

expressed Māori cultural values and/or *hauora* influences, so data were deductively analysed to study these cultural dimensions. Through this analytical process, theoretical sufficiency was reached.

Several methods were employed to maintain data integrity and to encourage reflexivity. Firstly, multiple field data sources were examined, including the field researcher's detailed case study of each household. The first author interviewed both Māori field researchers to confirm findings and note differing perspectives. Alongside this, the authors met regularly to critically discuss the coding framework and discrepancies in opinions regarding the findings and their interpretation and reporting. Given the diverse expertise of authors (Māori health, public health nutrition, behavioural nutrition, dietetics and qualitative research), investigator and theoretical triangulation was achieved.<sup>28</sup>

This paper complies with Consolidated Criteria for Reporting Qualitative Research (2007).

## Results

**Participants:** Participant characteristics are summarised in Table 1; no real names are disclosed. The first two households lived in the Wellington region. Areta (not her real name) and her five children had *whakapapa* links to Tainui iwi (tribe) (Household 1). Areta was a stay-at-home mother who depended on a government benefit for her income. Rachael and Tama (Household 2) affiliated to Te Arawa, and Te Aitanga a Mahaki and Ngāti Kahungunu iwi, respectively. Tama serviced aircraft and Rachael worked in military administration.

The two Northland households were *whānau*, affiliated to Ngā Puhi and Ngāti Whātua iwi. Household 3, headed by Ngaire and Hayden, was the *whānau* hub. Ngaire was a casual mental health employee, and Hayden was a mechanic. Their third daughter, Tiana, lived in Household 4 with Rawiri (Ngāti Wai iwi) and two of their six children. One son lived with Ngaire and Hayden. Tiana and Rawiri were employed full time, working in a pharmacy and managing a recycling business.

Analysis of qualitative data from these households revealed four themes: *overcoming socioeconomic hardship*; *sharing of food*; *gardening food* and *teaching food and nutrition skills*.

**Overcoming socioeconomic hardship:** Financial strain and the stress associated with food insecurity were hardships households experienced in differing degrees over time. Someone in each participating household had experienced hardship within their lifetime (food insecurity as a child/parent, offspring with mental illness). Most participating households transitioned in and out of food insecurity over time, but only the low-income household (Household 1) was food insecure at the time of data collection.

Areta's household was food secure when she lived with the children's father, but when they separated her income halved and she had to endure the transition into food insecurity. She explained the impact the stress of food

**Table 1** Self-reported Māori household characteristics

No.	Highest educational qualification	Household				Adults <sup>(a)</sup>			Children <sup>(a)</sup>	
		Income <sup>(b)</sup>	Income source	Housing	Food security status <sup>(c)</sup>	Fictitious name	Age (years)	Sex <sup>(d)</sup>	Number	and age range
1	High school (year 13)	\$30–50K	Government, Domestic Purposes Benefit	Rented	Food insecure	Areta	32	F	5	(2–12 years)
2	Technical trade certificate	\$70–100K	Paid work (2 incomes)	Rented	Food secure	Rachael, Tama	44, 44	F, M	1	(18 years)
3	Polytechnic diploma	\$80–100K	Paid work (2 incomes)	Rented	Food secure	Ngaire, Hayden	65, 65	F, M	3	(22–43 years)
4	High school (year 12)	\$50–80K	Paid work (2 incomes)	Rented	Food secure	Tiana, Rawiri	40, 41	F, M	2	(15–17 years)

<sup>(a)</sup> Individuals currently living in this dwelling; all of Māori ethnicity. First adult listed was the primary food preparer.

<sup>(b)</sup> Household income in NZ\$10 000 increments.

<sup>(c)</sup> Food security status at time of data collection, determined using New Zealand criteria.<sup>17</sup> Household 1 relied on others for additional money and food.

<sup>(d)</sup> F, female; M, male.

insecurity had on her as a parent; for example, she regularly sacrificed food if it meant her children were fed:

‘If I’m really hungry, I’ll...eat it [treat food], but most times I just let them [children] have it...’ [Household 1, visit 13, mother’s quote]

She lived for her children and put their needs before her own.

Areta struggled to purchase sufficient amounts of healthy food for her five children on a government benefit. She described her coping strategies:

‘...Areta tends to spend [NZD] \$150–\$200 on weekly shopping costs. She will bake, shop in advance...if there are specials, she will buy in bulk and then top up her groceries from there on following grocery trips...if she [Areta] has any money left over it is a bonus...’ [Household 1, visit 13 field note]

Despite strict budget constraints, Areta managed to provide basic healthy meals that incorporated a range of vegetables (including researcher-delivered produce) and met her family needs and preferences. Variation was limited. Prior to this intervention, she relied on frozen mixed vegetables, her small garden, and fruit in education settings. Areta appreciated the free weekly produce for several reasons: increased variety, perceived health benefits, and discretion to redirect money to family-based activities such as petrol/bus fares to a new playground or the library.

The impact of food insecurity changed household practices relating to food waste:

‘...She [Areta] said that she was very wasteful in her younger parenting days. She would buy meat...and if she didn’t want it...she would then just chuck it out... she didn’t care before, but the ‘ways things are now... more children to feed, on my own—so don’t waste, don’t get any money from anywhere else’...’ [Household 1, visit 4 field note and mother’s quote]

Areta made prudent food decisions; however, she was under considerable financial strain. The children’s grandparents contributed food, a vehicle and time to support this struggling household.

While Areta was able to get through a day with current levels of support, she was unable to provide special occasion meals for her children’s birthdays:

‘...She [Areta] used to have big dinners for all the family...the children’s father’s family used to make her feel like she had to do it...but last year they were a bit broke so they didn’t have a big birthday...’ [Household 1, visit 13 field note]

Areta could not afford hospitality, which affected her *whānau’s hauora*.

Other households discussed the impact of their prior food insecurity experiences. Rawiri grew up in a food insecure home; limited exposure to food variety affected his taste preferences. When their three teenage boys were living at home, Tiana and Rawiri often struggled to have enough food in the house because of financial constraints, thus their priority was satiety:

‘...In the past when they were on a real tight budget and feeding seven people, including her three sons, they ‘needed heaps of food’. She would always make meals that would go far and use bread to fill up...things have changed financially...it appears that Tiana is now less stressed about having enough food and more worried about having the right types of food...’ [Household 4, visit 3 field notes]

Despite these good intentions, Tiana’s household found it difficult to break satiety-driven habits, and to introduce a significant amount of fresh fruit and vegetables into their diet. Tiana and Rawiri’s teenage daughters often struggled to identify vegetables, such as capsicum and buttercup pumpkin, and did not have the skills to prepare or cook vegetables. Unsurprisingly, because of the food insecurity experience, healthy eating was lower priority than other aspects of life in this household.

Ngaire noted the financial implications of supporting her family:

‘Ngaire said that if it wasn’t for helping out their children and grandchildren, her and Hayden would be ‘rich’ ... But she said her kids and *mokopuna* [grandchildren] are what her and Hayden live for...’ [Household 3, visit 11 field note]

Ngaire and Hayden were deeply committed to ensuring their children, and grandchildren, had a roof over their head and food in their belly.

In summary, financial strain and the stress associated with food insecurity were hardships households experienced in differing degrees over time. The stressful impact of food insecurity was especially present in the low-income household, where the mother used a range of strategies, including giving up her own food, so her children could be fed. Long-term impacts of food insecurity as a child were observed in a food secure household that still prioritised satiety over healthy eating. These habits were difficult to change when food security was restored.

*Sharing of food:* All participating households shared food and showed they valued *whānaungatanga* (family relationships) through acts of *aroha* (love) and *koha* (gifting). The practice of sharing food with others is strongly associated with the Māori value of *manaakitanga* (hospitality).

For example, Ngaire employed an open door policy, so she usually prepared ample amounts of *kai* (food) to ensure anyone who arrived at meal time would be fed:

‘She [Ngaire] cooked a very large meal so there would be leftovers...but the *moko’s* [grandchildren] all came for dinner (7 people in total) and most of it got eaten...’ [Household 3, visit 6 field note]

Ngaire passed this tradition on to her daughter:

‘Tiana said she always makes more [food] for extras, referring to her sons or other friends...’ [Household 4, visit 4 field note]

She often asked the field researcher whether she wanted to stay for a meal. Food security enabled these two households to share their food with others and express *manaakitanga*.

The importance of the social aspect of sharing food with *whānau* was emphasised. Rachael acknowledged:

‘...Food has always been a social point for us, it’s satisfying to see people eating food...and when they’re full...’ [Household 2, visit 5, mother’s quote]

Tama, Rachael’s husband, spoke of the social, mental and emotional benefits he gained from visiting ‘home’ and eating food with his extended *whānau*:

‘...I feel I put on a bit of weight when I go up there [back home], but enjoy it because it’s a social thing, social interaction...feeling of belonging...’ [Household 2, visit 19, father’s quote]

All households shared these views.

There were times when participating households relied on *koha kai* (gifted food) from others, which set up expectations for reciprocal action. For example, time pressures sometimes prevented Tiana from preparing *whānau* meals, so their church community gifted her family frozen meals. To reciprocate, the family donated time to church activities in a mutually beneficial exchange.

Areta’s *whānau* frequently provided her household with tangible support (food, transport, time), which helped Areta cope with financial and single-parent hardships. She was grateful for this support, and encouraged her children to think of others who miss out:

‘...The children received several Easter Eggs each [external gifts]...she [Areta] wanted her children to give one of their eggs to someone they knew who were less fortunate...who didn’t get any...’ [Household 1, visit 17 field note]

Areta wanted her children to learn the value of sharing and expressing *manaakitanga*.

In summary, the sharing of food within extended *whānau*, or the wider community, enabled *whānau* to reduce the severity of food insecurity. This strategy relates to the Māori values of *manaakitanga* (support/hospitality) and emphasises the importance placed on *whānau* and *whānaungatanga* (family relationships).

*Gardening food*: All households had some type of food garden. Most participants learnt how to take care of the land and garden from their parents and/or grandparents. Having a garden, be it a large vegetable garden or small herb garden, enabled participants to engage with traditional practices.

Rachael and her 12 siblings grew up tending a large paddock garden. Her father used traditional gardening methods:

‘...Her father...gardened by traditions and rituals based on the Māori calendar and involving *karakia* (prayer)...’ [Household 2, visit 2 field note]

Rachael and Tama had a large garden, and growing food gave Rachael a sense of satisfaction. She spoke with happiness:

‘...It’s just amazing to see crops growing—you can look at it and say, yeah, I grew that...’ [Household 2, visit 2, mother’s quote]

Because their household was food secure, they often showed *manaaki* and *aroha* by gifting surplus produce to neighbours:

‘...In the past two weeks their vegetable garden has produced a great yield, so they have been able to share out their produce to their neighbours...’ [Household 2, visit 2 field note]

Thus, their household and others benefited from eating these nutritious foods.

In contrast, Areta could only have a small vegetable garden for her food insecure household because of her tenancy agreement. She used planter boxes and pots to grow herbs and small vegetables, because she believed home-grown fruit and vegetables were cheaper than store-bought ones:

‘...it [vegetable garden] doesn’t cost much, and I thought it would be worthwhile...everything costs the earth these days...’ [Household 1, visit 3, mother’s quote]

Having a garden enabled her to utilise money in other ways to benefit her household. All participating households rented their homes and either perceived or were told that they were not allowed to create a vegetable garden (or to enlarge an existing plot) on the rental property.

Gardening food is related to a broader value of *kaitiakitanga*, which includes caring for the environment and sustainability. Gardening enabled *whānau* to remain connected to the *whenua* (land), providing satisfaction of looking after the *whenua* so it could provide nutritious *kai* for themselves and others. Households with surplus produce could share this healthy food with others and express *manaakitanga*. Thus, gardening contributed positively to the expression of *hauora* (well-being).

*Teaching food and nutrition skills*: Main food preparers learnt initial food knowledge and cooking skills from parents or grandparents. For example, at age 27, Areta wanted to make a roast, so her mother came over and taught her. This experience gave Areta the confidence to replicate the dish and pass this knowledge on to her children. Most participating *whānau* passed on food and nutrition knowledge to *tamariki* (children) and *mokopuna* (grandchildren).

Rachael and Areta taught their children healthy eating principles from a young age to ensure a foundation of knowledge in later life. As Rachael explained:

‘...Starts from when the kids are small...giving them the right food choices versus KFC, McDonalds, so then the kids know when they’re older, they have the option of a healthy food choice...’ [Household 2, visit 14, mother’s quote]

Similarly, Areta’s *whānau* shared healthy eating knowledge with her, and she passed this on to her children:

‘...Areta also likes to quiz her children. She will ask them questions like, ‘What are we eating? What are these vegetables called?’... Areta feels that it is good to educate the kids...’ [Household 1, visit 3 field note]

Food knowledge and healthy eating were valued in both households.

Ngairē (Tiana's mother) found comfort in knowing that her other daughter, Wendy, had taught her children to cook:

'...Ngairē said her *moko* [grandchildren] are good cooks because Wendy had taught them...they can cook all sorts of things...like spaghetti bolognese... Moroccan chicken wraps...' [Household 3, visit 6 field note]

Passing on food knowledge and skills to future generations was an important goal for most participating households. Food preparers cooked many dishes learnt from family across the life course. Recreating these dishes for their own *whānau* passed on this knowledge to their children. Thus, most households had basic food and healthy eating knowledge and cooking skills, generally supporting food security and *hauora* (well-being).

## Discussion

Researchers explored, and gained an understanding of, food insecurity experiences in four Māori households. All households had personally experienced the stress and strain of income-related food insecurity. Short- and long-term negative impacts of food insecurity on *hauora* (well-being) were observed. Households developed a range of mechanisms to reduce the severity of food insecurity. These mechanisms illustrated expression of broader Māori values, especially *whānau*, *manaakitanga*, and to a lesser extent *kaitiakitanga*. Nevertheless, household food security was only restored when household income increased.

Household food insecurity can have both short- and long-term influences on health and well-being. In New Zealand, food insecurity is strongly related to psychological distress,<sup>29</sup> perhaps due in part to the stress and stigma faced by parents who are unable to afford enough food to feed their children.<sup>30</sup> Areta had the motivation, knowledge and skills to look after her children, but she had inadequate income to provide their basic needs. Her household's estimated weekly food costs, for a basic healthy diet in 2011, were NZ\$257,<sup>31</sup> yet she only had 58–78% of that amount to spend on food each week (NZ\$150–200). With *whānau* support (and temporary social support from our intervention), she maintained emotional resilience at the time. However, as housing costs rise and her children get older, and thus food costs increase, financial pressures and stress will challenge her resilience. For example, if her children had been 5 years older in 2011, her household's estimated weekly food costs for a basic healthy diet would have been NZ\$324,<sup>31</sup> twice her current weekly food expenditure. Areta had already adopted a range of strategies to stretch her food dollar, which are common in New Zealand households with children experiencing material hardship. These strategies included restricting fresh fruit and vegetables,<sup>32</sup> not having children's friends over for a meal or birthday party,<sup>32</sup> and adults going without food so children can eat.<sup>30</sup>

Inadequate incomes drive people to consume low-cost foods, and low-cost diets tend to be energy dense and

nutrient poor.<sup>33</sup> If satiety is valued and taste preferences are established with this dietary pattern, it may be difficult for households to establish healthy eating patterns when they have adequate income.<sup>21</sup> This phenomenon was observed in Tiana and Rawiri's household, implying long-term impacts of food insecurity on taste preferences and nutritional status. Thus, it cannot be assumed that as income rises and households become food secure, healthy eating will be prioritised over satiety. However, professionals need to think carefully about the ethics of promoting healthy diets to low-income families,<sup>15</sup> cycling in and out of food insecurity, unless tangible/instrumental support is also provided.

The level of food insecurity currently experienced by Māori is unfair, and contradicts the promise of equity inherent in the Treaty of Waitangi.<sup>34</sup> The 'right to adequate food' is included in the International Covenant on Economic, Social and Cultural Rights, which New Zealand ratified in 1978.<sup>35</sup> Therefore, the New Zealand government has a moral obligation to uphold this right for all citizens and promote policies that enable all households to have sufficient income for the basic necessities of life, including food.<sup>35</sup> A range of government policies are needed to lift Māori households out of poverty. Firstly, the Child Poverty Action Group's evidence-based policy recommendations (2017) should be considered.<sup>36</sup> For example, priorities for family income support include higher (and waged-linked) adult benefits, a higher minimum wage, and lower tax rates and well-designed child-related tax credits in lower income ranges.<sup>36</sup> Healthy food costs in New Zealand should also continue to be monitored,<sup>31</sup> and welfare benefits routinely adjusted to meet household basic healthy food costs. In the meantime, Māori households should have access to their full and correct benefit entitlements. A government report revealed beneficiaries and low-income families were missing out on entitlements of approximately \$200 million a year.<sup>37</sup> Finally, to enable Māori people to flourish, Māori economic development goals need to be realised. These goals include upskilling the Māori workforce, strengthening the transition from education to work, reducing Māori unemployment and growing Māori enterprises.<sup>38</sup>

For Indigenous people, the right to food, is linked closely to rights to land, sovereignty and culture.<sup>35</sup> McKerchar *et al.* found that Māori society highly values knowledge to maintain a stable food supply;<sup>39</sup> this knowledge needs to be transferred to future generations.<sup>40</sup> A pilot study in Whakatāne (population ~19 000) found increasing accessibility to traditional foods, such as *kumara* (sweet potato), yams, and *kaimoana* (seafood) improved food security and food sovereignty.<sup>41</sup> If Māori have access to free or low-cost traditional foods, such as *māra kai* (food from the ground) at marae, community gardens and cooperatives, then they can practice *manaakitanga* within their *whānau* by gifting healthy food. This approach to food access also relates to the broader value of *kaitiakitanga*.<sup>39,41</sup>

Participating Māori households valued teaching *whānau* how to grow, prepare and share healthy food, but structural barriers were present. For example, rental property

associations could amend tenancy agreements to allow small-scale food production. Community programs could support low-income *whānau* food gardening. These strategies may reduce the severity of food insecurity, but not resolve it. Areta was already making prudent food purchases, gardening, cooking and relying on *whānau*/community support, yet the food insecurity problem persisted.

The expression of Māori cultural values in participating households supported *hauora* (well-being). The importance of *whānaungatanga* (family relationships) was evident. Households held *whānau* as top priority when making food decisions. Being part of a *whānau* provided individuals with a sense of belonging and purpose, while enabling positive *hauora* outcomes.<sup>42,43</sup> Generally, Māori value the well-being of the collective.<sup>44,45</sup> Strong *whānau* support is positively associated with healthy eating behaviours such as fruit and vegetable consumption, as well as promoting adherence to a healthy lifestyle.<sup>46–48</sup> Thus, professionals should work in partnership with *whānau*, and consider *whānau* support as a potential component of healthy eating interventions.

The sharing of food, which illustrates *manaakitanga*, was important to all households, and researchers observed many positive effects on *hauora* for both the givers and receivers. Profound gains were observed in the food insecure household, whereby *whānau* gifts provided both tangible and intangible support to this family living in hardship. In *Te Ao Maori*, *mana* (prestige) is generated through giving, not acquiring resources; therefore, the expectation to provide food can stress Māori families with limited resources. Almost one-third of Māori women experience stress related to providing food for social occasions.<sup>18</sup> Since cost-drivers are likely to lead *whānau* to energy-dense, nutrient-poor food choices,<sup>33</sup> health professionals could support *whānau* with affordable, healthier food options to express *manaakitanga*.

*Study limitations and strengths:* We acknowledge that the ethnographic-style data from 96 home visits were detailed, but not collected for the specific purpose of exploring Māori household experiences of food insecurity and impacts on *hauora*. There may have been other experiences, impacts, and instances where cultural values were expressed, but not noted. Both field researchers were Māori, however, there may have been variations in how observations were experienced and recorded. Therefore, field researchers were interviewed in an attempt to triangulate findings and to collect supplementary information. Every attempt was made to grasp the context required to interpret data, but there may have been gaps in our understanding.

This research was specific to participating households; qualitative research findings are not generalisable to the wider Māori population. Māori today are a diverse population and one cannot assume that all Māori strongly value *whānau* connections. The experience of Māori with limited *whānau* connections is unknown.

Despite these limitations, this Māori-centred research, informed by *Kaupapa Māori* research theory, used novel ethnographic techniques to highlight the experience of

Māori households. Robust qualitative research processes were used, including reflective practice and reflexive accountability, to add credibility to the findings. Interactive learning cycles with input from knowledgeable others deepened and broadened the research.

*Conclusion:* Food insecurity, because of inadequate income, had been experienced by all participating households, and this experience had short- and long-term impacts on *hauora*. *Whānau* had developed many strategies to reduce the severity of food insecurity, relying on support from extended *whānau* and the wider community. These strategies related to broader Māori cultural values that could positively influence *hauora*. Households in our study valued *whānau* relationships and *manaakitanga*, and passed on food and nutrition knowledge to future generations. They expressed these values in a holistic way that honoured traditional cultural values.

Health and other professionals should use their collective impact to advocate for social justice and structural (policy) solutions that change systems perpetuating social and health inequity. All households need sufficient income to afford basic needs, including food. When basic needs are met, households and individuals can thrive and make meaningful contributions to society.

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## Conflict of interest

The authors have no conflicts of interest to declare.

## Authorship

LAM and BSB conceived the research question; all authors contributed to study design; LAM designed field research protocols and supervised field research; JM and EM collected field data; participants generously shared personal data; BSB analysed the data and interviewed field researchers. All authors contributed to and approved the final manuscript, heeding advice from reviewers and Associate Professor Suzanne Pitama.

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## Appendix

### Glossary

- *Aotearoa*: New Zealand
- *Aroha*: Love, compassion
- *Hauora*: Holistic health, dimensions include: *taha tinana* (physical well-being), *taha hinengaro* (mental and emotional well-being), *taha whānau* (social well-being) and *taha wairua* (spiritual well-being)
- *Iwi*: Extended kinship group, tribe, bone
- *Kai*: Food
- *Kaimoana*: Seafood
- *Kaitiakitanga*: Guardianship over the land
- *Karakia*: Prayer
- *Kaupapa*: Collective philosophy
- *Koha*: Gift
- *Koha kai*: Gifted food
- *Kumara*: Sweet potato
- *Mana*: Prestige, authority, influence, spiritual power
- *Manaaki*: To support, take care of, to protect, to show respect
- *Manaakitanga*: Support, hospitality, kindness, generosity
- *Māra kai*: Food from the ground
- *Mokopuna*: Grandchildren
- *Tamariki*: Children
- *Te Ao Māori*: Māori world-view
- *Whakapapa*: Genealogical structure
- *Whānau*: Family, to give birth
- *Whānaungatanga*: Building and nurturing relationships
- *Whenua*: Land, placenta