Creating Healthy Food, Building Healthy Families: An Evaluation of a Healthy Cooking Healthy Lifestyle Programme in New Zealand

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Abstract

Obesity has become an increasingly significant challenge as it continues to defeat public health sectors within developed and developing countries. The New Zealand Health Survey 2016/17 reported the prevalence for overweight and obese adults from 2006/07 to 2016/17 increased 5%, to 67%. Significant were the disparities for those living in the most deprived areas, with adult obesity up 5% to 44%, and extreme obesity up 3% to 11%. Overweight and obese children in the least deprived areas increased by 1% to 21%, in the most deprived areas it increased 8% to 49%.

Globalisation is a primary driver of obesity, as expanding economic systems are increasing the amounts, availability, and the marketing of energy-dense mass-produced ultra-processed foods. Established diets, which include significant amounts of fresh fruits and vegetables, have transitioned to these foods, as many consumers abandon cooking meals from scratch, for the convenience of the branded processed foods. The purchasing of these energy-dense ultra-processed foods for many households has become significant as they can be considered enjoyable, more affordable, simple and fast to make. The nutritional value of these foods can be very poor, and they can be high in added salt, sugars and fats. Studies show that the socioeconomic status of populations is a significant factor, concerning dietary patterns and the purchasing of these foods, when examining the rising incidence of obesity. The higher income consumers may have resources to address obesity within the family, such as gyms, learning cooking through purchasing books and paying for educational classes, however the low-income consumers are likely to have fewer resources to address the problem. Barriers identified for these low-income consumers to eat quality healthy foods are the cost of these foods and having a lack of healthy cooking knowledge and skills.

The Healthy Cooking Healthy Lifestyle Programme, developed in 2009, is a health support service for Bay of Plenty Māori communities. The aim of the programme is for participants to develop healthy cooking knowledge and skills which they can then utilise with their families. Delivered in the setting of the participants local Marae, the programme uses a motivational learning approach, empowering participants to apply what is learnt at home. This includes cooking family meals from scratch, with many of the different, more affordable vegetables available. The aim of this study was to evaluate the effectiveness of this programme from the perspectives of the participants

using the service. The study used a mixed methods approach as the methodology, with data collection tools being a survey and four focus groups. Eighteen parents or caregivers of children from three groups living within Bay of Plenty lower socioeconomic communities participated. Two groups, from different marae, had programmes held at the marae, while the other group, from a low decile school, attended in a church hall kitchen. The study questioned, "Do primary caregivers use more vegetables in the family meals after learning, from an interactive cooking programme, a range of skills and information for preparing and cooking different vegetable-based meals from scratch?"

Analysis of the results showed the participants gained in number of benefits in different ways from their experiences on the programme. Benefits included:

- the delivery method for the programme, in line with Self Determination Theory, worked to enhance autonomous motivation, and was appropriate as a motivational theory for the learning.
- building self-efficacy to apply what they learnt at home, including cooking family meals from scratch with more vegetables.
- learning about different vegetables, including frozen vegetables, which were often not used at home, as an affordable and enjoyable option.
- learning about cooking methods to get the most out of vegetables, including retaining and developing better vegetable flavours. This was appreciated by the families, and they used these vegetables more when cooking.

The study found that the programme was beneficial to families, and the family members responsible for cooking, in raising awareness of vegetable eating and cooking, building self-confidence in cooking, and teaching specific techniques for cooking vegetables. However, this is just one programme which addresses the vital need for better eating in the home. It does not have the scope to address the issue for wider society. Ultimately it requires government, as well as the commercial food sector, and the public, to make changes together. Instead, historically New Zealand governments have lacked taking significant action on the food system, including regulation on many of the high risk ultra-processed foods. Many of the support services for healthy eating and healthy action developed between 2004 and 2008, especially for the vulnerable low socio-economic groups, have been stopped. This study supports the calls to achieve

health equity through the development of a comprehensive national healthy eating and healthy lifestyle strategic plan to tackle the high prevalence of obesity. Policy is also needed for food regulation, and it is essential for empowering more high-risk communities with healthy cooking healthy lifestyle education. This will improve their capacity to cook healthily and improve their repertoire in cooking the more affordable healthy foods, which they can learn about on these programmes.

Recommendations include empowering individuals living in communities where health and social inequities are at their highest, with healthy cooking knowledge and skills, as this can provide these individuals with a better understanding, and the ability to self-manage a sustainable healthy eating lifestyle. This empowerment will be transformational for those individuals who are purchasing many ultra-processed foods, because they don't believe they have the knowledge, skills and tacit skills, and ultimately the confidence, to cook the many unfamiliar, yet more affordable, vegetables (or prepare salads) correctly so they can be enjoyed by their family and whānau.

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Notes on Terminology

Important definitions and acronyms

Agro food systems - extensive processes and systems developed for getting food products from agriculture to the consumer

Autonomous motivation - Within the Self-Determination Theory this is a type of motivation. The autonomously motivated have had the experience of freely choosing an action and being self-governing during the application of this action (Deci & Ryan, 2008)

AUT - Auckland University of Technology

Blanching of vegetables - Partly cooking raw vegetables, this is by placing portions of the raw vegetables into boiling water for about a minute, then rapidly cooling the vegetables, by draining them and placing them in cold water then draining again when cold

BMI - Body Mass Index, used to measure an individual's weight in kilograms (kg) divided by their height in meters (m) squared

BOPDHB - Bay of Plenty District Health Board

BOP - Bay of Plenty

CGS - Child Growth Standards used for the World Health Organisation is an age specific BMI for children from 0 to 4 years old (World Health Organization, 2006)

CH4K - Community Health 4 Kids is a service department within the Bay of Plenty District Health Board

GR - Growth Reference is a World Health Organisation age specific BMI for children between 5 and 19. It is defined through the WHO 2007 Growth Reference (World Health Organization, 2006)

Globalisation - Countries and people of the world becoming globalized and being able to interact and integrate. This includes economic globalization when countries come together as one big global economy, making international trade easier

Hauora - Māori language - this is a Māori philosophy used for health and well-being. This is also used, as in the context of this Thesis, as a term for a Māori Health Provider that is providing health and social services

Hapu - This is Māori language, for a subtribe

HCNP - Healthy Cooking and Nutrition Programme from 2009 -2012 - this was the name of the Healthy Cooking Healthy Lifestyle Programme

HEHA - Healthy Eating Healthy Action - this was a comprehensive strategic health plan developed by the Labour Party Government from 2004 – 2008, to tackle the obesity epidemic within New Zealand. HEHA was discontinued by a new Government by 2012

Highly refined carbohydrates - these are refined or simple carbohydrates such as sugars or refined grains that have been stripped of bran, much of the products fibre, and nutrients. This could include products such as white flour, white rice, white bread, pizza dough, pasta, pastries and cakes

Kai ora - Māori language in this context meaning healthy eating

Kanohi ki te Kanohi - Māori language meaning face to face in person interaction

Kaumatua - Māori language meaning an elder

Kuia - Māori language meaning a female elder

Marae - This is Māori language for a meeting house that has a kitchen and sleeping quarters and courtyard that is used for social or ceremonial forums

NZDep2006 - New Zealand Deprivation scale (1-least and 10-most) for 2006. This is an index of socioeconomic deprivation at a suburb level from Statistics New Zealand based on statistics including the 2006 census

Pakeha - This is Māori language and was originally used to describe early European settlers. This is often used to describe white New Zealanders who are non-Māori or non-Polynesian

PGPH - Postgraduate in Public Health

PHN - Public Health Nurse

Primary caregivers - Parents and main caregivers of children and pre-schoolers in their care

Raupatu - This is Māori language and refers to the Māori land confiscations throughout New Zealand that started from the 1860s

SDT - Self-Determination Theory is a macro theory of human personality and motivation that involves an individual's inherent growth tendencies and their innate psychological needs. The theory focuses on the types of motivation rather than the amount of motivation and the degree to which an individual's behaviour is self-motivated and self-determined (Deci & Ryan, 2008)

Te Kupenga Hauora o Tauranga Moana - This is Māori language - the name of a Māori Health Provider in Tauranga

Tītiko - This is Māori language and it is a marine mud snail

Whānau - Māori language, family or a group of people that are closely associated

WHO - World Health Organization

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgement), no material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signature: 

Date: 09/04/2020

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Ethical Approval

Ethics approval was given for the research of 17/210: Creating Healthy Food, Building Healthy Families, by the Auckland University of Technology Ethics Committee AUTEC on 7th August 2017 Appendix A.

Chapter 1: Introduction and background

Introduction

The first section of this chapter will focus on setting the scene for this study and provide a background description of the Healthy Cooking Healthy Lifestyle Programme (the cooking programme). The second section will provide an overview of the learning delivered to the participants. The third section will bring some context to the transformation of the food environment over the last forty years. This leads to how there is a necessity for better strategic government action and policy to change the fundamental drivers of the obesogenic environment that have developed over these years. This action also needs a focus on healthy living empowerment for those individuals and communities at risk, including the focus of this research, through this type of healthy cooking innovation. The fourth section of this chapter briefly covers past evaluations of the cooking programme and how there is a need for more research of the cooking programme. This is followed with an overview of the thesis.

1.1.1 Background

The Healthy Cooking and Healthy Lifestyle Programme is a Bay of Plenty District Health Board (BOPDHB) support service for health providers who are working with lower socioeconomic communities. The programme was first developed in 2008 as the Healthy Cooking and Nutrition Programme (HCNP) by the BOPDHB Healthy Eating Healthy Action Educator Stephen Cameron, the primary researcher of this study. This innovation was a response from the BOPDHB to the Ministry of Health National Health Strategy, Healthy Eating Healthy Action (HEHA). The aim of the programme is for participants to develop healthy cooking knowledge and skills which they can then utilise with their families.

The primary researcher has been a qualified chef for 27 years and was employed as a chef for 16 years before completing a Bachelor of Sport and Recreation in 2007 with Auckland University of Technology (AUT). The primary researcher was then employed with the BOPDHB as the HEHA Educator in 2008. This position involved developing and delivering a health intervention from 2008 to 2010. This position was specifically comprised as part of HEHA to provide healthy eating education to lower socioeconomic communities.

Once employed with the BOPDHB the HEHA Educator engaged in consultation with several Māori Health Providers in the Bay of Plenty (BOP) about teaching healthy cooking. Due to there being kitchen facilities readily available on Marae and Māori having a love of cooking, the Māori Health Providers welcomed the healthy cooking innovation. They also liked how the programme involved healthy cooking as a form of healthy eating empowerment for their communities. Within a very short period, the Māori Health Providers invited the healthy cooking and nutrition education support service in, to work on their Marae with their Kuia Kaumatua (female and male elders) Programmes. The kuia and kaumatua on several Marae, communicated with their programme facilitators that this was a good service to deliver healthy cooking and healthy living messages into Māori communities. Over the two years with the BOPDHB, the service was welcomed into over 70 of the BOP Marae, working to deliver healthy cooking and nutrition education with many whānau (families or groups). The delivery of the service sometimes also involved working with some Pakeha (European) and Pacific Island People.

From 2010 to 2013 the primary researcher then delivered the healthy cooking programme, employed by the Māori Health Provider Te Kupenga Hauora o Tauranga Moana as the Kai Ora (Healthy Eating) Facilitator. The cooking programme continued working as a HEHA support service in partnership with many Māori Health Providers and participants were from these providers' communities.

From 2014 the primary researcher was employed back with the BOPDHB and the delivery of the cooking programme is now with the Department of Community Health 4 Kids (CH4K). The primary aim of CH4K is to improve the outcomes for children, through working with them and their primary caregivers. The focus of one of the many services CH4K provide is on those children living in hardship in lower socioeconomic communities. The management of CH4K agreed the Healthy Cooking Healthy Lifestyle Programme would be a good healthy eating education programme for these priority communities and would fit with the Ministry of Health (2015a) Childhood Obesity Plan for District Health Boards (DHBs). Currently, as has been since the programme's conception, enrolments into the programme are through Community or Māori Health Providers. These providers can invite this BOPDHB healthy living education service in, to work with them in partnership with their community, which in most situations is free of cost to the provider.

Learning delivered through the cooking programme

The aim of the Healthy Cooking Healthy Living Programme is for participants to develop healthy cooking knowledge and skills which they can then utilise with their families. The programme is designed for lower socioeconomic communities. The programme provides practical hands-on cooking workshops, where the learning centres on skill development and discussing healthy cooking and foods with participants. Each series of the programme takes place over four or sometimes just three, four-hour cooking workshops. The cooking workshops are provided in a fun and interactive learning environment, where the focus is on healthy eating for families. The programme provides participants with a repertoire of cooking recipes and ideas through discussions and demonstrations, followed by their hands-on practise of the learning. Participants learn about safe food preparation, correct and safe cooking knife skills, healthy cooking techniques, and food presentation. The programme also involves developing a general understanding of good foods for healthy eating. These foods are mostly plant-based foods such as fruit, vegetables, legumes, lean meats and other good sources of protein. Discussion topics include explanations as to how all these foods are high in many essential nutrients and should be eaten for good health as they provide good amounts of fibre, vitamins and minerals. The learning information and the cooking techniques are mostly provided with all the relative information that is needed for a good understanding of each topic. Important concepts within the learning topics will often be repeated through the programme.

Over the ten years of delivering the programme, the hands-on food preparation methods and different cooking techniques for meats have become significant to the participants' learning. This was due to participants commenting some different cuts of meats that have been portioned and packaged, can sometimes be difficult to cook. During discussions when first developing the programme, many participants would often explain they only know how to cook meats by simply boiling or frying till it becomes soft and palatable. This lack of skill and knowledge about cooking methods has led into teaching participants about other cooking methods. This is done through cooking many of the recipes they learn during the programme, providing them with the know-how for cooking a variety of the more affordable meats. They also can learn different techniques such as the portioning of whole chickens, and the slicing and portioning of meats. This includes information about selecting mince that is mostly the colour red, without large amounts of white fat throughout the mince. This learning centres on how this is better for heart health and better value for money. The kilogram

price of different meats is open for discussion, and how participants can get good value for money when purchasing and cooking these meats.

Discussions will also centre on the skill of correctly selecting value for money and the best quality vegetables, when shopping. Vegetables greatly fluctuate in price depending on seasonality. Shopping for the affordable vegetables, including frozen vegetables, is a fundamental discussion topic. The learning also focuses on cooking vegetables that have had minimal or no processing, still in a whole raw form or portioned then frozen. This is because they have been identified on the programme, over the years of delivery, as items that can be difficult to cook to a good standard, without having the correct know-how, to retain all the taste, texture, colour and nutrients. Poor cooking techniques, such as overcooking, depending on the vegetable type, will spoil vegetables. Participants learn about the many ways of avoiding overcooking and spoiling the flavour, texture, colour and nutrients of vegetables. Some vegetables cooked incorrectly will even have their natural flavours tainted, and inadequately cooking vegetables can make them tasteless or even unpalatable for many people. Vegetables, and how to cook them, during discussions in past programmes have had a considerable amount of influence towards developing the learning. This development process is always on-going, and the direction of this learning is highly dependent on the participants' discussions. Learning to plan cost-effective healthy meals when working with a limited budget is often selected by participants during discussions, to become a significant part of their learning.

Awareness education is also provided about the disadvantages to health that can occur from eating excessive amounts of many highly processed foods. Discussions focus on how some of these foods can be high in salt, fats, highly refined carbohydrates and sugar, and how these foods can also be low in nutrients that are essential for living a healthy lifestyle. During each of the four workshops, the participants are provided with the experience and enjoyment of achieving the group goal, which is the preparation of a complete healthy meal. This is accomplished through everyone participating in the workshops as a team. This is followed by the blessing of the healthy kai (food) and the enjoyment of eating the kai as whānau (family or group) together in a table setting.

1.1.2 Context

In recent times, since the availability of sophisticated processing technology and the ever-growing globalisation of society, the food industry has continued along a path

where it has managed to proliferate into an incredibly powerful phenomenon. Alarming the public health sector is the overwhelming amount of effort provided by extremely creative organisations within this industry, to develop marketing campaigns for the many unhealthy, mass produced food products now available (Cohen, 2008). These foods are cleverly targeted towards consumers, and the exponential growth of this targeted marketing continues to grow despite having a significant influence on the deprivation of health for millions of people (Cohen, 2008).

The marketing systems created for the food industry continue to transform the food environment. These systems are supported by a countless number of mass media organisations, who are influencing behaviours through the immeasurable amounts of mass media cues for unhealthy food products (Kemps, Tiggemann, & Hollitt, 2014). This marketing has been incredibly significant, as populations throughout the world have transitioned away from eating and cooking predominantly traditional meals using whole ingredients, such as fresh vegetables (Popkin & Gordon-Larsen, 2004). When transitioning away from these healthy foods, and given the growing purchasing power of consumers, this has also involved many consumers progressively increasing their diets with economically marketed energy-dense mass-produced branded food products (Monteiro, Levy, Claro, de Castro, & Cannon, 2011; Popkin, Adair, & Ng, 2012). These are mostly available in abundant quantities, and there are highly competitive pricing structures calculated with the marketing of these products to support their sale (Howard, 2016).

The changes to diets and activity levels have meant that in a thirty-three year period, the Body Mass Index (BMI) measure for the global prevalence of obesity and overweight, (from 1980 until 2013) has increased substantially (Ng et al., 2014). In New Zealand, the prevalence of overweight and obesity combined for all adults has increased from 63% in 2006/07, up to 67% in 2016/17. The specific finding of obesity during the same period increased from 27% up to a high of 32%, almost a third of the population (Ministry of Health, 2017a). Over the 10 years from 2006/07, for children aged from 2 - 14 years with a BMI equal to overweight or obese, the prevalence increased by 4%, to 24% (Ministry of Health, 2017a). Further concerning factors about this high prevalence of obesity is how the highest increases are found to be with those people living in lower socio-economic communities and among Maori and Pacific People (Ministry of Health, 2017a).

1.1.3 Rationale

Despite the rising rates of obesity and the continued widening of the obesity-related health disparities, the two recent Governments of New Zealand have shown limited leadership. This is in regard to reducing the rates of obesity, by putting the attention of government sectors on primary prevention and the failings of the food system. There has been a lack of policies aimed at reducing the ever-increasing amounts of non-healthy foods being marketed and consumed (Swinburn & Wood, 2013). Furthermore, the National Party, after being elected in 2009, removed the previous (1999 to 2008) Fifth Labour Government's obesity-related health targets and started their collapse of the Ministry of Health National Strategic Plan, Healthy Eating Healthy Action (HEHA). HEHA had a focus on physical activity, and nutrition programmes, such as healthy eating education, healthy cooking and guarding in schools to name a few. These programmes were delivered with an enthesis on community development and participation. The National Party Government also rescinded the school healthy food guidelines with their restrictions on some foods sold in schools. With this announcement, the Minster of Health, Tony Ryall, argued there is no need for nanny state policy as people need to have personal responsibility (Swinburn & Wood, 2013). Gamble (2001) may argue that this direction is due to many governments choosing to work from the model of Neoliberalism. This includes bringing in flourishing markets through reducing the burden of taxation and removing market restrictions, including restrictions put on the sale of foods.

After being elected in 2017 the Labour Coalition Government, led by Jacinda Arden, announced in June 2019, funding of 47.6 million dollars for supporting schools and early learning settings (Anonymous, 2019). The aim of this funding is for the improvement of child wellbeing through healthy eating and physical activity changes to the learning environment. This funding, and the policy announced in 2019 for restricting the sale of some unhealthy foods in schools, is welcomed, with the proposed changes to be made to the health and physical education curriculum for improving the wellbeing of children. This is in line with the Sixth Labour Government's 2018 Health Targets, using a mix of health systems and population improvement measures, to improve child wellbeing. However, development of a comprehensive national obesity strategy with significant policy to bring about a healthier environment and behaviours for all New Zealanders seems to be an inconsequential task for the Ardern Government, as it was for the last National Government. The 2017 Ardern Labour Coalition Government, unlike the government led by Labour's Helen Clark, has not shown any will to develop

an essential well-researched and well-planned comprehensive national healthy eating and living strategic plan. This strategy is needed to combat the increasing prevalence of obesity and other related conditions. Reasons for this may relate to the fears of the Labour Coalition that regulation may be unpopular with voters, and there may also be strong lobbying coming from the influential food and beverage industry.

1.1.4 Participating in learning through meaningful partnership

The background of the cooking programme has shown healthy cooking innovations are in demand for those living in lower socioeconomic communities. This is to provide people living in these communities with the skills and know-how to self-manage sustainable healthy eating lifestyles. The development of the cooking programme started through a partnership with the Māori Health Providers and the participants within the providers' communities. The focus of this partnership has been on healthy cooking for Māori in the marae setting and at home when cooking for whānau (Appendix B). Through these partnerships, over ten years, the development of the programme has advanced through many consultation processes that have been meaningful for all the stakeholders.

Method for delivering the cooking programme

When the primary researcher started a Postgraduate in Public Health (PGPH) in 2012, this influenced changes to the cooking programme delivery method, and this influenced changes to the learning. The early PGPH papers had a significant focus on participatory approaches when working with communities. This was significant in the development of the new delivery method of the cooking programme by 2014. The focus of the delivery for the programme became more about what the participants wanted to talk about, and what they had to say and wanted to learn about. The programme became more participant centred (with added participatory hands-on learning) engaging with participants through the active ongoing group discussions, instead of topic presentations. The intention became more about developing the programme to have more emphasis on the aspects of nurturing the participants' self-determination and, in line with the work of Deci and Ryan (2008) to achieve autonomous motivation through a participatory learning approach. Participatory learning, in general, is about actively involving participants through drawing upon their knowledge, experience and skills when solving problems, using examples and situations that are relative to them in their

daily life (Bradley, 1995). This way of learning can also be through using a variety of new and enjoyable visual teaching methods (Bradley, 1995), such as interactive cooking, to develop more interest in learning.

During 2013, many conversations with the Māori health providers and the programme participants were about how they believed the programme could be improved. Importantly, they were listened to and action involving their suggestions was applied to the programme. They provided input that the focus of the learning should be more on the practical skills of cooking rather than the large focus the programme had on nutrition at the start of each workshop. Participants expressed that some aspects of the nutrition education could be confusing and were not interesting. What they favoured in the programme were the discussions about cooking with the hands-on learning. Through the partnership with the stakeholders, compromises were made with agreement to develop what was considered the best possible learning for participants. Much of the focus on nutrition in the Healthy Cooking and Nutrition Programme was dropped in 2014. The programme became the Healthy Cooking Healthy Lifestyle Programme, with more focus on the hands-on learning through the cooking. Most of the nutrition education was replaced with discussions, including learning about the benefits of plant-based foods, and learning about cooking vegetables correctly and affordably.

The delivery of the cooking programme always had a focus on hands on learning; however, over time it developed to have a more interactive, participant centred, approach to the development and delivery of the learning. Through conversations throughout the programme, participants provide the direction of the learning and the types of things they like about the learning and may want to continue to learn. This ensures that the programme is working towards meeting the participants' needs, with other advantages, including supporting their autonomous motivation. Deci and Ryan (2008); Black and Deci (2000); Kusurkar, Croiset, and Ten Cate (2011) argue the yield gained from autonomous motivation, through participatory types of learning, will produce improvements towards an outcome of better psychological health. They agree that, through gaining autonomous motivation with learning, this will provide effective performance for heuristic types of actions, with a greater long-term persistence for the action learnt, including maintaining changes to healthier behaviours.

The cooking programmes historic evaluations

Over the first five years of the cooking programme, it has been evaluated a number of times to measure outcomes and to improve the development of the programme. These evaluations showed that the programme has achieved some significant outcomes. In 2010 the HEHA Community Educator wrote the Healthy Cooking and Nutrition Programme Report (Cameron, 2010). This was about the development and outcomes of the cooking programme from 2008 to 2010, with evaluation results from 57 participants from eight of the groups that were enrolled. All the participants confirmed they would recommend the course to others. The majority strongly agreed that the course was interesting, fun and understandable. The report also showed positive results were being achieved for the Māori providers who were bringing the cooking programme into their communities. This feedback from the providers acknowledged the programme was helping to achieve healthy eating outcomes in their communities and on Marae (Appendix B).

During the time the cooking programme was a BOPDHB contract service with Te Kupenga Hauora, an independent evaluation of the programme by (Bomford & Rolleston, 2012) was commissioned. This was with four groups of marae cooks from four different marae hapu (village tribes) receiving four workshops each. The cooking programme from 2009 to 2012 had a strong nutrition focus with teaching cooking skills. The evaluation method used by Bomford and Rolleston (2012) was through a pre-programme and post-programme survey. The Bomford and Rolleston (2012) evaluation showed some positive healthy eating and cooking outcomes with the cohort of four different Hapu within the Bay of Plenty (BOP).

1.1.5 Research aim and objectives

Over five years, from 2008 to 2013, when the cooking programme was a HEHA service, first with the BOPDHB and then with Te Kupenga Hauora, 4993 participants attended workshops. The high participation numbers have also continued over the last five years. This is due to the high demand from Māori Health Providers and a lack of comparative cooking or healthy eating education programmes being widely available for communities in need. With high Māori participation, it is concluded that the cooking programme is widely accepted by Māori in the BOPDHB region as a marae-based education programme, and this is a contributing factor to the programmes continuation. Since 2012, the outcomes achieved from the delivery method and learning format,

having more focus on participation through conversations, have not been fully evaluated or explored. Researching the programme can explore outcomes from the learning approach, including the participants' empowerment, their upskilling in cooking more vegetables, motivation, and their thoughts regarding achieving affordable healthy cooking at home.

Published studies of other healthy cooking programmes involving students, and among urban minority youth in the United States, have reported positive results in the participants' self-efficacy, and participants have reported increases with eating vegetables (Dunn, Jayaratne, Baughman, & Levine, 2014; Meehan, Yeh, & Spark, 2008). The Healthy Cooking Healthy Lifestyle Programme is promoted and then implemented with the primary caregivers of the children who are living in the lower socioeconomic communities CH4K works in. The BOPDHB Public Health Nurses (PHNs) for CH4K and Māori Health Providers are invited to identify and refer these parents and caregivers from these communities to the cooking programme. This can happen when these primary caregivers indicate they want to learn more about a healthy eating lifestyle for their family and that they would like to attend the programme for healthy cooking and eating education. The aim of the research is to evaluate the effectiveness of this programme from the perspectives of these participants in the programme. The study used a mixed methods approach to explore the influences on the participants eating and cooking practices. Exploring how they are affected by the cooking programme delivery method and learning, together with what they achieve from the programme and what affects the programme has on their cooking and eating behaviours at home with the whānau (family). The current study is questioning, "Do primary caregivers use more vegetables in the family meals after learning, from an interactive cooking programme, a range of skills and information for preparing and cooking different vegetable-based meals from scratch?"

Research objectives

The research objectives are:

- to recruit and enrol the primary caregivers (parents or caregivers) of children living in three different lower socioeconomic communities in the BOP, as participants of the cooking programme and the research.

- through four focus groups sessions, with a set of open-ended questions for each session, gain the perspectives of each group of participants' about attending the cooking programme.
- during the focus groups sessions, gain the participants perspectives of cooking adjustments made at home after they attended the cooking programme.
- gain each participant's pre and post programme cooking and eating perspective, through two surveys with sets of Likert scale questions.
- keep a reflective research journal to capture the participants' repetitive comments made during the cooking workshops.

1.1.6 Thesis Overview

This thesis is comprised of 5 chapters. Chapter 1 provides an overview of the development and the education of the Healthy Cooking Healthy Lifestyle Programme. This progresses into how this education was developed in partnership with the Māori Health providers and the participants. This is followed with how the programme now sits with the BOPDHB in Community Health 4 Kids (CH4K) and requires an up to date evaluation. Chapter 2 presents an exploration of the literature. This section explores facts about obesity, and the determinants of health including globalisation and the food industry. This is followed with an argument for tackling obesity while exploring different approaches within public health. The review also explores how healthy eating education can be provided, through healthy cooking interventions, with those individual's or communities who may not have the skills or knowledge for cooking many of the more affordable non-processed foods available, from scratch. This is followed with how empowerment can be achieved, by supporting an individual's self-determination, through support for competence, relatedness and autonomy throughout their learning. Chapter 3 discusses the thinking behind the methodology used in the mixed method research. This then explains why dialectical pragmatism was selected as a paradigm for the research, as it was considered appropriate for the mix of methods used. In Chapter 4, the findings derived from the questionnaire and focus groups are presented, with the qualitative findings portrayed as key themes. Chapter 5 discusses these findings in comparison to previous studies and literature. This chapter concludes with recommendations of this study, the conclusion of this research and the limitations.

Chapter 2: Literature Review

Introduction

This critical literature review explores the public health issue of obesity using the WHO social determinants of health framework (2008), in particular focusing first on the prevalence of obesity and the global food industry, then on poverty in the context of New Zealand. This addresses some of the social determinants of health and food security, by focusing on the effects of poverty and globalisation and how these have rapidly advanced over the last forty years, bringing with them what is called *the diet transition*. With social determinants being accelerated further for the poorer sectors of the global population, the review explores how these social and health inequities increased, through a global trend of governments from the 1980s changing to free markets, user pays and cuts to social services, predominantly through adopting the neoliberal framework policies. Then exploring how these policies have exacerbated wealth and income inequities, and diminished social circumstances and health, while increasing rates of obesity for many of the poorest populations, to a significant degree, including those who are the poorest living in New Zealand (Pickett & Wilkinson, 2010). This is followed by exploring the globalized economic system that promotes the growth and consumption of low cost but poor quality energy-dense foods, that seems to show little, if any, consideration for the health outcomes of the populations that purchase these foods (Swinburn et al., 2011). This is followed with an argument exploring different public health approaches for use when fighting obesity with individuals, communities and at the national level. From the 1980s, the global communities' transformation to diets high in ultra-processed foods coincided with the dynamics of significant social and environmental change. The focus then moves on to healthy foods and empowerment-based solutions, for communities at risk. This includes working with the principles of the Ottawa Charter, healthy cooking education, and then interactive participatory learning to support self-determination as a motivational approach when addressing healthy eating.

Strategy for conducting the literature review

The strategy used for conducting the literature search, was to use data bases and Google Scholar, searching for key words and phrases. The literature in relation to

obesity statistics for the global population and then for New Zealand, and the significance of this, was reviewed first. The social determinates of public health and obesity were then reviewed, specifically investigating the effect of globalisation and the agro-food industry, governments adopting neoliberal policy and how these determinates have significantly affected the world's poorest populations.

The social determinants of health were reviewed again with ways they can be addressed. Then the pros and faults of different preventative public health actions were reviewed, including health education interventions with those individuals or communities considered to be at risk. This led to several questions and these questions being explored throughout this section of the review. Should the emphasis of preventative health be focused on population health that includes policy and system-based approaches? Since there are critics of the health education approach that intervenes with the individuals that are considered high-risk.

Funding, and the appetite for health education programmes that target those communities at risk, has been gradually diminishing. This led to reflection on community and the values of the Ottawa Charter, and whether they have been lost to individualism and the capitalists' market, leading to changes to political systems and areas within the primary care sector over the past twelve years. After the completion of this review, in the 2019 budget the government responded to childhood obesity, releasing funding for action that will be targeted in schools. This was then added to the section that discussed the past and current actions in New Zealand to tackle obesity. The next faze went into exploring the literature about healthy cooking as an approach for strengthening and up skilling individuals and communities and addressing their poor consumption of vegetables and other healthy foods. The cooking programme and its delivery is implemented through interactive participation which is based on nurturing autonomous motivation. Autonomous motivation is a concept that sits within Self Determination Theory (SDT) and these were reviewed, bringing the chapter to its summary.

Key words

The key words and phrases used for the search were obesity, social determinants of health, globalized economic system, global food industry, lower socioeconomic,

processed food, social and health inequities, diet transition, healthy eating interventions, vegetables, healthy eating, food cost, community healthy cooking programmes, empowerment, motivation, and Self Determination Theory.

2.1.1 Global obesity epidemic

Obesity was at first considered to be a condition that could be attributed to the behaviour of eating disproportionate amounts of high-calorie foods (Burton, Foster, Hirsch, & Van Itallie, 1985). As we have learned, obesity is now understood to be a complex condition that consists of a comprehensive mix of social, cultural, commercial and environmental determinants, alongside the science of genetic, metabolic, physiologic, behavioural and psychological systems (Bagchi & Preuss, 2012). The rising prevalence of overweight and obesity has corresponded with the rising prevalence of the interrelated health conditions of type 2 diabetes mellitus, high blood pressure, asthma, arthritis, cardiovascular disease and some cancers (Burton et al., 1985; Prospective Studies, 2009). Obesity is now considered by many health professionals to be an epidemic and given how complex it is, it is proving to be an overwhelming health challenge for both developing and increasingly with developed countries (Popkin, 2010; World Health Organization, 2017).

The World Health Organization (2017) (WHO) standardised measure for identifying overweight and obesity for adults at the population-level is the Body-Mass Index (BMI). All adults over the age of 18, both male and female, BMI are calculated from the adult's body weight being squared with their height. Adults with a BMI of 25 kg/m2 to 29.9 kg/m2 are considered, overweight and those with a BMI of 30 kg/m2 or over are obese. The prevalence of overweight or obese adults over 17 years old has nearly tripled globally since 1975, with 39% of adults being overweight and 13% obese World Health Organization (2017).

The WHO BMI for children is age specific. From 0 to 4 years old it is defined through the WHO 2006 Child Growth Standards and for children between 5 and 19 it is defined through the WHO 2007 Growth Reference (World Health Organization, 2006). For children and adolescents aged 5-19 the prevalence of both overweight and obese BMI has risen considerably from 4% in 1975 to just above 18% in 2016, and the obesity BMI lifted from 1% to almost 7% (World Health Organization, 2017). Childhood

obesity is considered by The World Health Organization (2017) to be one of the most significant public health challenges confronting the global population.

A comprehensive systematic literature analysis of surveys, reports and published studies that extracted the physically measured BMI data of 183 countries from 1980 to 2013, found the global rates of overweight and obesity increased substantially (Ng et al., 2014). The rates of adults with a BMI above 25 had increased from 28% in 1980 to 37% in 2013 (Ng et al., 2014). They also analysed the data for overweight and obese children and adolescents (2-19 years) and found significant increases in the developed countries; the boys had risen from 17% in 1980 to 24% in 2013 and the girls had risen from 16% to 23% (Ng et al., 2014). Respectively for the boys and girls of the same age, this increased from 8% in 1980 to 13% in 2013, (Ng et al., 2014). The analysis reported that it had demonstrated that globally, during a comparatively short period, there have been widespread and substantial increases in the prevalence of overweight and obesity (Ng et al., 2014).

Moving from the global to the local obesity rates, the New Zealand Health Survey 2016/17 has an annual sample size of approximately 14,000 adults and 5000 children (Ministry of Health, 2017b). The survey reported that the prevalence of overweight and obesity combined for all adults increased from 63% in 2006/07 to 67% in 2016/17, and the specific finding of obesity during the same period increased, from 27% to 32% (Ministry of Health, 2017a). Additional concerns are the disparities shown with those living in deprived areas. For adults living in the least deprived areas from 2006/07 to 2016/17, the prevalence of obesity lifted 3% to 25%, and extreme obesity (class 3) remained at 2%. However, for adults in the most deprived areas during the 10 years, obesity increased by 5% to 44%, and extreme obesity (class 3) lifted by 3% to 11% (Ministry of Health, 2017a). Over the 10 years from 2006/07, for children aged 2 - 14 years with a BMI equal to overweight or obese, the prevalence increased by 4%, to 24% (Ministry of Health, 2017a). During the same period, for overweight and obese children residing in the least deprived areas, the prevalence increased by only 1% to 21%, in contrast to children in the most deprived areas, where it increased by 8% (41% to 49%) (Ministry of Health, 2017a).

2.1.2 Globalisation and the food industry as determinants of a diet transition

The steep rise in obesity and diet-related chronic diseases began during the 1980s, known as the diet transition, and is considered to be a response to globalisation and the effects of the market capitalist model on our food system (Hawkes, 2006). After the second world war, globalisation and market capitalism saw new economic systems established and eating patterns started to transition away from traditional foods, towards increasing amounts of energy-dense mass-produced branded food products (Moubarac, Parra, Cannon, & Monteiro, 2014; Raine, 2012). In the 1980s, starting with the Thatcher and Reagan governments the ideology of neo-liberalism began to be adopted into the policy of governments globally (O'Neill, 2012). This meant regulation in the global marketplace, governing the market and agro-food systems, was increasingly being dismantled (Hawkes, 2006). Through these actions, markets expanded and accelerated as the nature of the markets and the agro-food systems sustaining them changed. For the corporations involved, this produced opportunity to reduce production costs, and increase scale, penetration, availability, quantity and the attractiveness of agro-foods within the markets (Hawkes, 2006; Moubarac et al., 2014). With liberalisation of global trade, corporations had greater opportunity to control and influence all aspects of global food production, from producing seed and pesticides, to planting and harvesting, all supported with highly industrialized processing and distribution networks (Vineis, Stringhini, & Porta, 2014).

Neo-liberalism is an ideology with an overall aim to grow global money markets, through reducing the burden of taxation, removing market and other restrictions and shifting to the widest possible conditions of a free market (Gamble, 2001). For the neo-liberal policymakers, achieving this meant targeting and changing the ways of trade unions and the welfare state (Gamble, 2001). They also aimed to change policy in a way that would force the labour markets to become as flexible as possible and move costs, with user pays, away from the state to the consumer and the markets (Gamble, 2001). The growth in global stock markets brought food-related foreign investment to low-income countries and this supported establishing transnational food processes (Vineis et al., 2014). Over the last thirty years, the transformation in the production, distribution and procurement from agro-food systems has increased the availability of foods globally. However, during this period, for many undeveloped countries the occurrence of a greater level of food security has not

materialised (Kennedy, Nantel, & Shetty, 2004). The liberalizing of these markets has had other, wider implications, affecting the world's poorest populations while drawing further wealth to the richest percentile of the population (Fuentes-Nieva & Galasso, 2014). The dismantling of trade unions and provisions of welfare may help capitalism in the short term, however Gamble (2001), warns us that a build-up of hostility and hopelessness amongst the poor and those without property is very probable.

As local markets advanced with liberalisation that encouraged further input from direct foreign investment, this brought rapid and extensive changes to the environment, including advancing conditions for living sedentary lifestyles (Popkin, 2010). Changes to work and leisure, technology and mass media coverage, all considerably contributed towards the obesogenic environment the developed world is now living in (Popkin, 2010; Swinburn & Egger, 2004). Furthermore through the mass media environment, consumers are receiving immense amounts of exposure to images of eating, in shops, fast food outlets or advertising of foods in magazines, on public transport, billboards and electronic screens (Kemps et al., 2014). Environmental changes and media cues are thought to be artificially stimulating a response, which is also leading consumers to the over-consumption of the energy-dense foods as well as less active lifestyles (Cohen, 2008). Most of the world economies are shifting towards further liberalization and more free-market enterprise and pressures from these factors are causing problems as efforts for a regulatory approach to reduce marketing of obesogenic foods and beverages are fraught with difficulty (Swinburn et al., 2011).

Swinburn et al. (2011) argue that we need to confront and regulate the root causes and drivers of obesity and this means we have to address the globalized economic system that promotes the growth and consumption of energy-dense foods. Pincock (2011, p. 761), corresponding to this commentary of Swinburn et al. (2011), agreed that the “fight against obesogenic environments, needs to be more tightly linked to the wider political debate about strengthening democracy and recapturing public policy for public benefits rather than being dominated by corporate interests”. Swinburn et al. (2011) argues for addressing the obesogenic environments created through enterprising free markets, by having regulatory approaches on obesogenic foods and beverages. However Swinburn et al. (2011) also acknowledge the difficulty with implementing the proposal. With Vos et al. (2010) they found, through modelling, that the single most cost-effective approach to tackling obesity is taxation on unhealthy foods. In 2014 the New Zealand Medical Association Policy Briefing Tackling Obesity

recommended to the government that they “formally evaluate the use of financial mechanisms to reduce the consumption of unhealthy food” (Anonymous, 2014, p. 22). They also recommended that action needs to be taken, and revenue raised through such tax be re-invested back into obesity research and prevention programmes. To date, these recommendations have not yet been actioned by the two Governments that have been in power since the publishing of the briefing.

Categorisation for the level of food processing

Through market investment into modern agro-food systems, countries became able to mass-produce simple raw products such as cereals, grains and animal protein (Hawkes, 2006). Mass-produced foods in their raw state have a moderate value; for the investments to make more lucrative profits, the additional value was added through the processing of these foods (Vineis et al., 2014). Raw agro-food products can be transformed into edible oils, caloric sweeteners, and animal-sourced foods to name a few (Popkin & Gordon-Larsen, 2004). With additive treatment, hydrogenation, pre-cooking and packaging and other forms of processing, these standard base food products are transformed into ultra-processed foods, increasing profits while producing the foods that are considered tasty, but with little regard for the consumer’s health outcomes (Vineis et al., 2014).

Generally, in most settings, much of the consumers' food choices have undertaken some form of food processing, having either beneficial or adverse effects on diet quality and nutritional outcomes (Moubarac et al., 2014). Often the terms "processed foods" or "highly processed foods" are not defined within the literature and can intrinsically be related to unclear names like fast foods, junk foods, and convenience foods (Moubarac et al., 2014). Monteiro, Levy, Claro, Castro, and Cannon (2010) developed a foodstuff classification system for categorising the level of processing that is applied to foods available to consumers. The first food group (Group 1) is unprocessed or minimally processed foods, such as fruit and vegetables including frozen vegetables. The next is (Group 2) processed culinary or food industrial ingredients such as flour, plain noodles, plain and fresh pasta. Then there is (Group 3) ultra-processed food products such as bread and bakery products, breakfast cereals, cereal bars, flavoured noodles, rice-based dishes, rice crumbs, convenience foods, cheese, desserts and ice-cream and other confectioneries.

Benefits of food processing include food growers and suppliers having lower post-harvest food losses through preserving methods and packaging. This includes the blanching and freezing of vegetables straight after the harvest, ensuring the peak nutritional value of the vegetables can be maintained until the time of their use (Dwyer, Fulgoni, Clemens, Schmidt, & Freedman, 2012). The processing of some foods can improve food safety, such as pasteurising, reducing the risk of ingesting microbial pathogens, or the packaging of foods reducing the risk of contamination (Dwyer et al., 2012). The choices and the availability of processed foods continue to be developed, including offering consumers health foods that are manufactured to fit specific health needs. Health foods can be comprised of fortified foods, where a nutrient is added to the food, or light food where a nutrient is reduced within the food, or packaged food stating it is free of a specific nutrient, such as being lactose-free or gluten-free (Dwyer et al., 2012).

Food processing methods, such as alcoholic fermentation, salt pickling, hydrogenation and the sugaring of foods and drinks, has been found to produce food products that can be detrimental to the consumers' health (Moubarac et al., 2014). In Portugal, Albuquerque, Santos, Silva, Oliveira, and Costa (2017) found, when looking at the amounts of fatty acids and salt in processed foods, the snack foods, fast foods, and ready to eat meals all had a high salt content. They also found high amounts of saturated fats in biscuits, wafers and snacks, and high amounts of trans-fatty acids in fast foods, followed by snacks, potato products and bakery goods. Kruel, Gurak, and Concha-Amin (2018) found that when the consumption of ultra-processed foods was at its highest in a cohort, the total fats, saturated fats, carbohydrates and free sugars, and sodium content, increased significantly, and the protein, fibre and potassium in their diet decreased. They reported that when the cohort's diet increased in ultra-processed foods, it also increased free sugar levels "from 9.9% to 15.4% of total energy from the first to the last quintile (Kruel et al., 2018, p. 586). It is generally recognised that these diets high, in fat, sugar and salt, increase the risk for the development of several chronic diseases, including obesity, diabetes, some cancers and cardiovascular disease (Albuquerque et al., 2017).

Ultra-processed foods which are found to be high in energy density are mostly composed of refined grains, added sugars and fats. They can be extremely palatable, with a low nutrient content and they are seen as the less costly foods available (Drewnowski & Specter, 2004). With these foods also considered to be at the lower end

of food prices, they are more favoured by the lower-income consumers than the less energy-dense foods that are higher in nutrients (Drewnowski & Specter, 2004). Foods that have been implicated in the rising prevalence of obesity are these types of foods that provide high amounts of energy at a very low cost (Drewnowski, 2007). Luiten, Steenhuis, Eyles, Ni Mhurchu, and Waterlander (2016) analysed the profile of foods sold in New Zealand supermarkets. They found the nutrient profile of the ultra-processed foods was poorer than the profile of the culinary processed foods and these foods, in turn, were found to be poorer than the minimally processed foods.

In Brazil, Monteiro et al. (2011) found that over the past 30 years, household consumption of (Group 1) unprocessed or minimally processed foods, and (Group 2) processed culinary ingredients foods, has been steadily replaced with the (Group 3) ultra-processed food products. Through using the foodstuff classification system developed by Moubarac et al. (2014), it was found that of all packaged foods available within four New Zealand supermarkets, the majority (84% in 2011 & 83% in 2013) were classified as (Group 3) ultra-processed foods (Luiten et al., 2016). Furthermore, within some other developed countries, the ultra-processed foods have been found to make up over 60% of the diet (Moubarac et al., 2013; Slimani et al., 2009). The large range of these easily accessible and convenient ultra-processed foods made available to consumers can considerably decrease the time, energy, knowledge and skills required for meal preparation. These characteristics make ultra-processed foods an attractive option for consumers. With their appealing palatability, competitive pricing, and convenience being aggressively marketed, the danger for the potential of over-consumption is increased. With many ultra-processed foods generally being considered to be low in fibre and high in sugar, fats and salt, this over-consumption increases the risk to health (Monteiro et al., 2011).

With the transformation of food products through processing, consumers dietary patterns and food cultures changed, and subsequently, for many, health outcomes also changed (Kennedy et al., 2004). Processed foods are now considered more significant to the determinants of dietary patterns, relating to dietary quality, impact on body weight, diseases and health outcomes, than they were 30 years ago (Moubarac et al., 2014). Furthermore it was found in France by Fiolet et al. (2018) with a considerable cohort of (104980) adults having a 10% increase in the consumption of ultra-processed foods in their diet, the risk of cancer overall was significantly increased, by 12%, and the risk of getting breast cancer this was increased by 11%.

2.1.3 Population health and working with high-risk individuals

Raine (2012) argues the health promotion sector will very often consider the first action for defence, against a non-communicable disease such as obesity, is educating. This education is often through campaigns about the consequence of not living a healthy lifestyle and how the better lifestyle can be achieved. Raine (2012) argues there is an assumption that promoting education, about the disease and the risks of the disease, will somehow inspire those individuals at risk to reduce their risks related to this disease. Raine (2012) argues that this focus on behaviour change through education, as shown from lessons learned from other industrialized nations, has not stopped the rise of the obesity epidemic. The theme running through the argument of Raine (2012) is essentially that, when fighting preventable diseases such as obesity, the primary focus needs to be on the upstream outputs of the environmental and social determinants. Then the environmental conditions for those at risk will be improved for sustaining them with living a healthy lifestyle.

Schulz and Northridge (2004) argue health benefits, such as reducing the risk of obesity for lower socioeconomic communities, could be partly achieved through addressing the health inequalities that are influencing obesity, and psychological stressors of these communities, with policy for a living wage and quality education. This would lift the standard of living through the redistribution of wealth, reducing financial insecurity and increasing fundamentals for life for these communities, such as their good health and affordable nutritious food (Schulz & Northridge, 2004). In the New Public Health (Baum, 2015, p. 31) argues "that public health is deeply and inevitably rooted in social, economic and political circumstances and that understanding and reflecting on these is a prerequisite to effective action for public health". Thomas (2000) recommends avoiding the assumption that health behaviours are completely dependent of the individual's self-efficacy. Separating the individual's health behaviours, when aiming for change, from their larger social context maybe an explanation for the outcome that falls well short of expectations (Thomas, 2000). Many community planners, educators, industry leaders, practitioners within public health and scholars since the 1960s have had concerns that the expert-driven technocratic approach in their fields has prevented the achievement of valuable creative processes or the exploration of the full potential of human capabilities (Wilmsen et al., 2008). According to Wilmsen et al. (2008) this has contributed to the exacerbated social inequities that

have transpired, yet these same systematic approaches are used within these fields today.

Rose (1985) strongly argued that interventions with the high-risk individuals and the population health-based approaches are counterparts within preventative public health. Rose (1985) argued the focus needs to be on discovering and controlling the causes of the incidence. Rose, Khaw, and Marmot (2008) consider that individuals influencing behaviour by opinion-forming and health educating are reliant on working with societal trends, if their influences are likely to be effective. The individual approach seeks to identify high-risk susceptible individuals and intervene for their protection. The advantage of this approach, is that the target is the appropriate individual and, because of this, the ratio of benefits to risks is going to be far more favourable (Rose, 1985).

According to (Rose, 1985) the disadvantage of specific individuals receiving special interventions, is that a high number of individuals who may not be at high risk but are still a borderline risk, will not have the opportunity for the same intervention to reduce their risk. Secondly (Rose, 1985) states that working to intervene with the high-risk individual is a temporary approach that is not radical but it is palliative. Rose (1985) argues this is because it will not alter the underlying causes of the disease, as it is not addressing the origins of the problem, as it is only working with those shown to be susceptible. Rose (1985) believes that primary health care, needs to be focused on working with the population with objectives that aim to control the population determinants of the risk. Rose (1985) would also argue that a small shift in health action for the whole population, such as decreasing salt in bread, will transpire to a substantial health outcome, as it covers much of the population. This is in comparison to a significant change in health behaviour in a small group of high-risk individuals, such as with a high-risk group attending a healthy cooking education programme, as this will only transpire into a health outcome among a few.

The work by Whitehead (2007) aims to broaden the understanding of a range of different approaches to health promotion. Whitehead (2007) is an advocate for the macroeconomics population health approach. However, Whitehead (2007) argues we must also work with micro-social health improvements through working directly with those in disadvantaged communities. This is empowering them with the knowledge and skills needed to develop their strategies to achieve their optimal health. This is working with the individual or community in disadvantaged circumstances, in some respects,

addressing their perceived deficit "whether that is a deficiency in the individual's knowledge, beliefs, self-esteem and practical competence in life skills or powerlessness" (Whitehead, 2007, p. 474).

Whitehead (2007) argues for working with the populations, communities and the individual if the need is there, with four actions, to tackle the social inequalities in health. The first action is to "strengthen individuals" at risk by empowering individuals with strategies to improve their health. Secondly "strengthen communities" - this is a community development approach - by building social cohesion and mutual support in the disadvantaged communities, then the community's individuals' health improvements will follow. The third action is "improvements to the living and working conditions". This is a system and policy population approach aimed at reducing exposure to health-damaging occurrences and psychosocial environments. The fourth option is improving and "promoting healthy macroscopic policies". This is a policy and population approach, through improving macroeconomics where the culture and environmental context of living standards can be lifted (Whitehead, 2007). It is clear Whitehead (2007) encourages addressing health inequity through both population and systems approaches, while still working to strengthen communities and empowering those individuals with high needs with strategies to improve their health. However, what needs to be understood about all these public health approaches within New Zealand they are mostly reliant on the dominant political party elected to power. History has shown this with the loss of Healthy Eating Healthy Action (HEHA) in 2012 with its approach that was based around the values of the Ottawa Charter.

2.1.4 New Zealand government's actions for tackling obesity from 1999

An identified key priority for the New Zealand Labour Government elected in 1999 was the reduction of inequalities for different demographic groups (Ministry of Health, 2004b). Health inequalities were found to exist between the ethnic groups, socioeconomic groups, between male and female groups and people living in different geographic areas, and the greatest inequalities were found to exist between Māori and non-Māori and Pacific people and non-Pacific people (Ministry of Health, 2004b). The Ministry of Health (2004b) committed to addressing inequalities. This was by effective action in health through a balanced approach of tackling both social and economic inequalities and providing access to effective health and disability services. The health

intervention framework of Healthy Eating – Healthy Action – Oranga Kai – Oranga Pumau, (HEHA) provided a range of policies and systems that aimed to improve health outcomes for all New Zealanders while making sure HEHA was addressing health inequalities (Ministry of Health, 2009).

The New Zealand Health Strategy 2000 decided to focus on three objectives that directly relate to obesity. These were to improve nutrition, increase physical activity and reduce obesity (King, 2000). Healthy Eating Healthy Action, commonly known as HEHA, became the priority of the 5th Labour Government which was elected in 1999 (King, 2000). A comprehensive, evidence-based national strategic plan to tackle obesity was led by the Minister of Health, Annette King, and was launched in 2003. The Vision of HEHA is for an environment and society where all individuals, families and whānau, and communities are supported to eat well, live physically active lives, and attain and maintain a healthy body weight (Ministry of Health, 2009). The HEHA Implementation Plan 2004-2010 is a comprehensive document that has an outcome focus and provides a set of actions based on the HEHA Strategic Framework document and evidence from the HEHA Background document. The HEHA Implementation Plan 2004-2010 brought the National Strategy together after it had been actioned in 2003 (Ministry of Health, 2004a).

Māori health is a significant part of the 2004 HEHA Implementation Plan. This is in line with the Māori Health Strategy known as He Korowai Oranga (HKO) (King & Turia, 2002). HKO ensures that funders and planners are given strong direction to ensure that appropriate, sustainable services are being funded and delivered for Māori whānau (Ministry of Health, 2004a). There are identified pathways in the HEHA strategy to achieve the aims of whānau (family) and hapu (tribe) wellbeing - Whānau Ora (Family Health). These pathways aimed for the development of whānau, hapu and Māori communities, Māori participation, effective health and disabilities services for Māori and include working across government and non-government sectors. Māori considered it crucial that there were more effective processes, including the collecting of relevant information, a more effective understanding of Māori, and better monitoring and evaluating procedures (Ministry of Health, 2004a). The Māori specific outcomes for action in the HEHA Implementation Plan had been identified as meaningful and important actions that are considered sustainable and are consistent with HKO by the Māori caucus of the HEHA Advisory Groups (Ministry of Health, 2004a). Other targeted groups significant in the planning of the HEHA Implementation Plan are the

Pacific People, concerning the Pacific Health and Disability Plan, Children, Families, and other lower socio-economic population groups.

The Ottawa Charter 1986 is fundamental in the development and the implementation of the HEHA Plans. The Ottawa Charter was established through the first International Conference on Health Promotion on the 21st of November 1986. The Charter aim is to achieve, through action, health for all by 2000 and beyond. This was a response to growing expectations for a new public health movement around the world (World Health Organization, 1986). The definition of health promotion in the Ottawa Charter is "the process of enabling people to increase control over and to improve, their health" (World Health Organization, 2017). The aim to achieve the outcomes in the HEHA Implementation Plan is explicit to the action of the objectives, set through a timeline that has used three two-year phases over a total period of six years. The first five HEHA objectives are comprised of five of the six guiding principles for Health Promotion in Action from the Ottawa Charter World Health Organization (1986). The principles used are:

- Build healthy public policy.
- Create Supportive Environments.
- Strengthen community action through participation.
- Develop personal skills and provide the education and information for health, increasing ability to take control over one's health.
- Reorient health services through working together.

The final three objectives of the HEHA Implementation Plan not referenced in the Ottawa charter are:

- Monitor research and evaluation.
- Communications.
- Strengthen workforces (health and physical activity workforces) (Ministry of Health, 2004a).

McLean et al. (2009) state the HEHA framework recognizes the multiple stakeholders involving government and non-government organisations and draws upon the principles of the Treaty of Waitangi and The Ottawa Charter, while addressing health inequalities. Furthermore, the strategic approach it takes to nutrition, physical activity and obesity recognizes the ecological relationship between the objectives and the environmental and socio-demographic factors (McLean et al, 2009). However,

McLean et al. (2009, p. 4) determine the "HEHA Strategy is dynamic and thus may be influenced by changing political and social contexts".

When the 2008 National Government was elected, the Minister of Health, Tony Ryall, announced in May 2009 their new health targets, with the focus being on hospitals and specialist care (Tenbensel, 2009). This meant this Government fulfilled its campaign promise which included dropping the Ministry of Health three strategic population health goals for obesity (Tenbensel, 2009). Funding for HEHA was dismantled and reallocated from 2009 by the Minister of Health, with the rescinding of healthy school food guidelines. This was a nationwide policy that restricted the amounts of unhealthy foods sold in schools (Swinburn et al., 2011). The Minster's argument was that people should have personal responsibility and not be guided by nannie state policy (Swinburn & Wood, 2013). This meant that community HEHA strategic planning was removed from the Bay of Plenty District Health Board Annual Plan (2010/11). The HEHA Communication Funding also ended in 2010 and with the Māori and Pacific People Community Action Funding being withdrawn as well, this all finalized the ending of HEHA projects in July 2012.

O'Neill (2012) argues solidarity from the times of the 1970s is no longer a key principle of governments, starting with the Thatcher and Reagan governments and increasingly right-wing economic policies, and including policy implemented by left-wing socialist parties in the 1990s. Thus the dominant ideology now has become global capitalism. O'Neill (2012) argues that the Ottawa Charter's base values of humanism and solidarity have arrived at the end of an era, leaving the Ottawa Charter increasingly remote from these values. O'Neill (2012) would agree that community approaches such as HEHA, based around the values of the Ottawa Charter, now look like, they have become irrelevant. (O'Neill, 2012) explains this is because the Ottawa Charter is no longer reflecting the dominant social consensus of the second decade of the 21st century and it is no longer in line with the values that are leading the world today. O'Neill (2012) puts forward the question to us all, will the world continue with the path it's on, or return to a more community-minded approach to problem-solving, such as the policies of the Ottawa Charter?

In 2009, under the National Government, the Ministry of Health direction (as part of a national health strategy) for all of the DHBs to provide HEHA health intervention programmes, working with high risk and high needs individuals and communities, was ended (Tenbensel, 2009). However, some DHBs, due to the high

need and demand, considerable investment and positive outcomes, chose to continue with some of their health education programmes. An example of this is Project Energize working at primary and intermediate schools within Waikato DHB Region. Project Energize is a successful health education programme that started in 2005 working to improve children's health through working with children, families and communities in schools and play (Sport Waikato). Furthermore, within the twenty DHB regions, through funding provided from the Ministry of Health directly to the Primary Health Organisations and Maori Health Providers, some healthy eating healthy living education programmes within communities have continued and are being developed. There are also Charitable Trusts and NGOs with programmes like Garden to Table, empowering school children with the understanding of growing vegetables and cooking. Many of these NGOs and Charitable Trusts are relying on volunteer help and donations for funding.

After dismantling HEHA from 2009, the National Government's Minister of Health, Tony Ryall, was highly pressured for four years, by academics and health advocating organisations, about the high prevalence of obesity. The Minster of Health did some backtracking on his earlier stance and released some funding, for the duplication of an Australian healthy living model, within ten regions. The Minster announced Healthy Families New Zealand (Healthy Families NZ) in March 2014.

Forty million dollars of funding was procured for Healthy Families NZ for four years. This was for bringing together good leadership, information and resources for helping people live more healthily with their families (Ministry of Health, 2019). The Healthy Families NZ teams try to work collaboratively with the leaders of local organizations to identify and design changes to help people live healthier lives. This is for helping communities to create an integrated, community-wide "prevention system for good health" within the local education settings, workplaces, food outlets, marae and other community organizations willing to open their doors to the Healthy Family NZ teams (Ministry of Health, 2019). As Healthy Families NZ is a systems-based approach, the employed staff of Healthy Families NZ, in theory, would not be directly working with the individuals in the community. They are not directed to work with the community's individual members to address their deficiencies of knowledge, beliefs, self-esteem and practical competence in life skills through directly delivering health education. Rather, Healthy Families NZ may work with the leaders of the community, addressing the deficiencies within the community through a systems-based approach

(Ministry of Health, 2019). With the Labour Coalition Government's May 2019 Budget, Healthy Families NZ did not procure more funding.

Green Prescription (GRx) is a New Zealand wide primary care health programme funded by the Ministry of Health. The GRx aims to address physical activity levels and nutrition of individuals through regional support service providers. The GRx contracts and the service delivery are overseen by the regional DHBs, and the service is delivered through Regional Sports Trusts and a small number of Maori Health Providers. Registered health professionals, General Practitioners or Practising Nurses can prescribe a GRx to patients who will benefit from physical activity. The GRx support person will encourage the patient to increase physical activity and to improve nutrition. This is through working with the client over a period of 3 to 4 months with monthly telephone calls or face to face meetings that can be monthly or through community setting group support if achievable (Ministry of Health, 2013).

The Active Families Programme GRX also delivered by Sports Trust in some regions began in 2004. GRX aims to help children, young people and their families to increase levels of physical activity when they have been referred to GRX for support (Ministry of Health, 2015b). In 2017 the Ministry of Health allocated more funding ($2.1 million) to 10 of the DHBs to expand Active Families to 4-year-olds. This is for the obese 4-year-olds identified in the B4 School Checks (B4SC) prescriptions to Active Families Programmes. Primary caregivers of obese 4-year-olds are referred by the B4SC, to the Active Families programme for nutrition advice and activities, when a 4-year-old in their care is identified as being obese.

In 2019, from the seven New Zealand Health targets, the target of "Raising Healthy Kids" is the only target that now has a direct connection with the prevention of obesity. Furthermore, the health target "More heart and diabetes checks" is no longer expected to be reported as a health target for DHBs from 2018. The Ministry of Health has been given direction with the existing 7 targets, (led by the 2017 elected Labour Coalition Government) from 2018, to develop a new set of performance measures to improve the health outcomes for New Zealanders. This will have a focus on population health outcomes and the Ministry of Health will need to ensure that resources are used optimally through evidence-based practise and research. Developing these new measures, the Ministry of Health needs to consider the following criteria:

- a mix of the health system and population health improvement measures.

- alignment with government priorities, for example, child wellbeing and mental health.
- to be quantified and timed.
- availability of data to monitor progress.
- sector engagement and support.
- focus on health issues with alignment to socioeconomic determinants (Ministry of Health (2018a).

The Labour Government in May 2019 announced the funding of 47.6 million dollars for supporting schools and early learning settings (Anonymous, 2019). This funding is for improving the wellbeing of children through healthy eating and physical activity changes in the schools and early learning settings. The funding goes towards support to enhance teacher practise and leadership within the child education settings, changes to the curriculum and relative health and physical education. Support will be provided to all early childhood learning settings and schools. This support will have guidelines, curriculum resources, and health promotion staff and physical activity advisors for the schools. The implementation will also include a focus on healthy eating policies, in these learning settings, through the provision of an active learning environment (Anonymous, 2019). Policy for restricting the sale of some unhealthy foods in schools is to be explored as a possible action. However, the Government has made it clear it will not explore an action involving legislation such as taxation on sugar-sweetened beverages.

2.1.5 Poverty, racism and environmental change as determinates of obesity in New Zealand

Obesity and overweight within New Zealand and throughout the world has been presented within this chapter as a significant challenge confronting the public health sector. Decreasing levels of physical activity, high blood pressure and the lack of the recommended amounts of fruit and vegetables has now become well established within New Zealand (Ministry of Health, 2017a). Prevention of obesity worldwide is proving to be complicated and this is evident when observing the continued increases in the prevalence during the past decades (Bagchi & Preuss, 2012). Worldwide between 1975 and 2016 the prevalence of obesity has nearly tripled and there has been little progress made with stopping the increase (World Health Organization, 2017). Internationally,

and within New Zealand, when examining populations within socioeconomic groups for the highest rates of obesity, we see that the most impoverished communities, where the education and income levels are at their poorest, are where the highest levels of disparities are found (Drewnowski & Specter, 2004; Ministry of Health, 2017a). The socioeconomic status of populations is significant to dietary patterns and the rising rates of obesity, with the lower socioeconomic groups being drawn to cheaper high-energy ultra-processed foods that may be considered more affordable, but have very poor nutritional quality (Kennedy et al., 2004).

The report New Zealand Living Standards (2004) found that a quarter of the one million New Zealanders who were living with some degree of hardship were living in severe hardship, with those living in the most restricted living conditions slipping into deeper poverty (Jensen et al., 2006). Pickett and Wilkinson (2010) rank New Zealand sixth out of all countries with the largest wealth and income inequalities. They also state that the higher a country's ranking for wealth and income inequalities, the more acute is that country's ranking for health and social problems (Pickett & Wilkinson, 2010). Furthermore, New Zealand was ranked as fourth for wealth and income inequities out of countries in the developed world. Pickett and Wilkinson (2010) considered the expanse of health and social problems stemming from wealth and income inequities are considerable within New Zealand. These are reflected in the well-being of children, social mobility, mental health, physical health, education, drug abuse, imprisonment, teenage pregnancies, violence, trust, poor community life and obesity.

With Māori, they have always considered the gathering of (kai) food, as one of the most important methods for acquiring resources, and Māori believe the health of these resources such as awa (river) for the Iwi is an indication of their health. Coastal estuaries and inland rivers have always been the place where Māori have gathered much of this food (Taiapa, Bedford-Rolleston, & Rameka, 2014). Māori started losing access to much of their traditional food gathering resources through Raupatu (land confiscations) from the 1860s onwards. The devastating and irreversible repercussions of these confiscations were that their food environment, and their health and spiritual wellbeing, continue to be severely affected to this day (Stokes, 1990). Even within the last 40 years, the capacity for Māori to gather healthy, plentiful, nourishing, cost-free traditional foods from many rivers, estuaries and coastlines are still being drastically diminished (Taiapa et al., 2014).

Providing one example from the many lost natural healthy food sources gathered by Māori in recent times, the tītiko, or mud snail, in the Tauranga Harbour, was abused by several introduced environmental factors (Taiapa et al., 2014). The decline of these tītiko habitats in the harbour was due to a sewage pond nearby, the development around rivers and coastal estuaries discharging household effluent, spraying, storm and waste-water, land sediment, and fertiliser run-off (Taiapa et al., 2014). With one of the last known habitats in the Tauranga Harbour gone, the decline ended, as put forward by Taiapa et al. (2014 as sited in Te Kani, 2006) "*One of our staple foods in those days was the tītiko, a shellfish which has since disappeared, approximately 4-5 years ago. I believe a major reason for this is due to the discharge from the fertiliser works into the sea*". Through the decline and loss of these traditional food sources, many of these gathered foods are no longer a sustainable part of the diets of entire communities who once depended on these foods for their health and food security (Taiapa et al., 2014). With these foods gathered, prepared and cooked through traditional methods, presumably those Māori, who can no longer simply access these types of food resources, would no longer be regularly using, or passing down to others, their traditional preparation and cooking methods for these healthy foods.

Lanumata, Heta, Signal, Haretuku, and Corrigan (2008) conducted the research, Enhancing food security and physical activity: The views of Māori, Pacific and low-income peoples. They found participants' acknowledge their lack of understanding and skills in the areas of food, nutrition, cooking, health and budgeting. Lanumata et al. (2008) made a recommendation for health education programmes that address the participants' perceived lack in healthy living attributes. However, Lanumata et al. (2008) warn that providing this health education without providing attention to the cost of healthy food, and the availability of resources for people to afford these foods, could also run a risk of "setting people up to fail". They warn there could be potential for this education to turn into victim-blaming, for instance, if these people are blamed for failing to use their new understanding and skills, when their limited resources and the expense of the healthy food make it very problematic, if not impossible, to succeed (Lanumata et al., 2008).

2.1.6 Eating more vegetables and cooking from scratch

Important to healthy cooking interventions aiming to increase the consumption of fruit and vegetables is the review by Rolls, Ello-Martin, and Tohill (2004). (Rolls et al., 2004) explored intervention studies looking at the relationship between fruit and vegetable consumption and weight management. They found that increasing the consumption of fruit and vegetable intake alone has shown they play an important role in weight management. This is a significant finding for interventions that are aiming to reduce obesity risks, through teaching healthy cooking increasing the consumption of fruits and vegetables. Haslam and James (2005) argue if long-term weight loss is to be successful for an individual; it would be highly dependent on an active lifestyle, with the self-management of a sustainable, quality diet that is high in vegetables while supplying an energy intake that is balanced. Rolls et al. (2004) state that satiety can be enhanced, and hunger reduced, with the eating of some fruit and vegetables, and with mixing additional vegetables into dishes, there is an association with lower energy density and a reduction in energy intake. Ramsay, Shriver, and Taylor (2017) found, with parents and caregivers, when they can support children to have a greater consumption of a variety of fruit and vegetables, by offering them more frequently, the children may overall have a better quality of diet as well as better subscales, such as empty calories.

Within Australia Begley (2016) reported that the total daily energy consumed, from eating discretionary foods like biscuits, cakes and chips and other ultra-processed foods was, on average, just over 35%. Begley (2016, p. 3) explained that conventional reasoning for this suggests “that this pattern of food choices is related to a lack of cooking skills”. Ritzer (1983) argued back in the early 80s, through a process of rationalisation, deskilling and devaluing, meals cooked at home from scratch were already being systematically replaced by pre-prepared highly industrialised convenience foods. This high prevalence of consumers purchasing ultra-processed foods was often explained to be a consequence of the consumers’ preference for convenience when eating. However, through looking closely at the agro-food industry Jaffe and Gertler (2006) revealed that this industry has waged a double disinformation campaign on the consumer, to manipulate and re-educate under the pretences of responding to demand. Jaffe and Gertler (2006) state that for cooking food at home there is a problem, as there has been an absolute and relative deskilling of the consumer. They argue the food manufacturers have significantly replaced the practice of cooking raw foods at home

from scratch, while their foods have become increasingly subject to more scientific industrial processes.

Jaffe and Gertler (2006) argue many consumers in these times have lost or do not have the necessary knowledge for making discerning decisions about the many aspects concerning raw food products. This includes determining the quality of lower-priced foods such as minimally and non-processed vegetables and the skills needed to make these basic foods into a sustainable quality diet. Begley (2016) would argue that when consumers become reliant on food industries, supermarkets, ultra-processed foods and fast foods, the concern is that this is limiting the control they have over the nutritional value of foods in their diet. Leather (1996) proposed that if people are lacking in cooking skills they have less opportunity and ability to simply control their diet and they find it harder, than those with cooking skills, to follow the basic principles of healthy eating. Lang and Caraher (2001) express that having cooking skills gives people choices and without these skills, choice and control are diminished and the dependency culture develops. Engler-Stringer's (2010) research into the cooking practises of low-income woman, found they also wanted to try and cook other ethnic foods, with vegetables and ingredients they saw in the stores. However, they were afraid because they did not know how to prepare them and if they did not cook them correctly, they believed these foods would then go to waste. This waste would be a significate loss for those living on low incomes.

Lang and Caraher (2001) have put forward the question, why should we be worried about cooking the evening meal at home in today’s society when this meal can be secured through a simple phone call or email? Lang and Caraher (2001) then responded, having the skills of cooking are far from being out of date in today's world, having proficient cooking skills can be empowering in today's world when the individual is faced with a confusing array of ready-prepared foods. With the study from Gorton (2016) it was found that cooking, and the literacy of cooking, is important as it lets people take control of their health and gives them more healthy choices. Lang and Caraher (2001) discuss the idea that if we expect people to control their own health and make healthy choices, they need to know how to select healthy foods and know how to cook them. However Begley (2016) would argue, that in Australia, cooking skills are not necessarily in a poorer state today compared with people's perceptions of how they were in older days. Begley (2016) argues that people haven't stopped cooking but it does appear that they are cooking differently. Gorton (2016, p. 1) cites the website

Vegetables.co.nz and how it “has recognised the general decline in skills and ability to cook healthy meals in New Zealand. (Gorton, 2016) explains how it is concerning that many children and young people are growing up today only knowing how to cook toast or turn on the microwave.

In New Zealand high food cost for many people is the reality, and the price of healthy foods such as fruits and vegetables can be a barrier to maintaining a healthy diet. When healthy foods are compared to the ultra-processed energy-dense foods, the perception for some consumers may be that it is more affordable to purchase the ultra-processed foods. However, Ni Mhurchu and Ogra (2007) suggest it is possible to achieve nutritional improvements in diets, through exchanging the purchase of ultra-processed foods with the healthy staple foods and the minimally and non-processed foods without any significant increase to food cost. Through the use of Monteiro et al. (2010) food processing classification system, where foods were categorised into 3 Groups, Luiten et al. (2016) using a method of nutrient profiling of foods, also found in New Zealand supermarkets no significant price difference between energy-dense ultra-processed (Group 3) foods and the less (none and minimal) processed foods of Group 1 & 2. They concluded this finding may indicate, for consumers who are time poor, they may consider the purchasing of the ultra-processed foods provides them with better value for their money.

Leather (1996) would argue that when the individual is lacking in cooking skills, they have less opportunity and ability to simply control their diet, and they find it harder, than those with cooking skills, to follow the basic principles of healthy eating. This may mean the findings of healthy staple foods sold in New Zealand supermarkets being just as affordable as ultra-processed foods may still not provide enough motivation needed for some individuals, to purchase more of the healthy foods. The primary driver for the foods they purchase could be their cooking knowledge and ability. If an individual wants to start, or was to change to, cooking a diet of healthy staple foods and they don’t have the know-how and ability to cook these foods, such as vegetables in a whole form that need to be cooked from scratch, their success is not guaranteed. However, could success be guaranteed when preparing, cooking or just opening the packet and then eating ultra-processed foods? Many of the food manufactures may agree that it is virtually guaranteed.

Vidgen and Gallegos (2011) used the Delphi approach with their study, which involved interviewing many different Australian food experts and educators about their

understanding of "food literacy" concerning nutritional health. They found when an individual has knowledge and understanding of food products (food literacy) this can improve their nutritional health. Having greater food literacy provided more choices, and fewer restrictions from other available resources and the surrounding environment, such as recipes, books, cooking shows and gardens. Vidgen and Gallegos (2011) also found a further consequence of having good food literacy was effective food preparation. This meant producing the more desirable meal that was more likely to be eaten. Furthermore, they found having greater certainty about food preparation also brought improvement to an individual's food security. These were all considered to be mechanisms for empowerment, as they were improving the control over the foods available within the individual's environment (Vidgen & Gallegos, 2011). They found that food can meet multiple needs, but when these needs come into conflict it can be difficult to maintain a quality diet.

Short (2003) conducted a study between 1997 and 1999 with thirty domestic cooks; this was to systematically research a way of thinking about domestic cookery. Short (2003) revealed useful insight into the practices and approaches of domestic cookery, finding cooking skills are a complex set of principles that consist of mechanical, perceptual, conceptual, academic and planning skills that are person-centred. Short (2003) considered:

- the mechanical skills involved techniques such as chopping.
- the perceptual skills are when people can judge taste, colour and texture.
- the conceptual skills involve the ability to predict the outcomes and to be creative or demonstrate the ability to adapt.
- the academic skills are the knowledge of food safety and nutritional value of foods.
- the planning skills involve the understanding and the timing of cooking tasks and fitting of cooking around other tasks.

Aiming to improve health outcomes and increase cooking skills and the understanding of healthy foods, cooking programs have been applied in many different communities as a form of health education. Cook Smart Eat Smart, a programme working with college students, showed some positive results, with changes in healthy eating behaviour improving cooking ability and confidence (Dunn et al., 2014). The cooking programme, a programme actioned with urban minority youth, who had

displayed high risk eating behaviours, exposed the youth to alternative food sources through cooking, shopping and nutrition education (Meehan et al., 2008). This intervention produced significant improvements in knowledge about food sources and showed some good results with the enjoyment of cooking and the consumption of fruits and vegetables (Meehan et al., 2008). Cooking with a Chef, a cooking programme with college students, found that this intervention, consisting of a nutrition education component delivered by a chef, produced a positive impact on the participants' self-efficacy involving their cooking abilities (Warmin, Sharp, & Condrasky, 2012).

Several healthy cooking interventions have been researched to date and these published studies are showing healthy cooking programmes are producing some positive results for participants (Dunn et al., 2014; Meehan et al., 2008; Warmin et al., 2012). These international studies have shown increases in self-efficacy when measuring the confidence of participants when they are learning cooking. This improved confidence (self-efficacy) included the participants cooking ability and their knowledge about food. There have also been increases in fruit and vegetable consumption through learning cooking, with a range of different population groups (Dunn et al., 2014; Meehan et al., 2008; Warmin et al., 2012). However, there are no health intervention studies, with groups of primary caregivers from lower socio-economic communities in New Zealand, exploring responses to learning healthy cooking through an interactive and autonomous learning environment.

2.1.7 Empowering through autonomous learning

Significant to providing a health and nutrition education intervention is the sustainability of all aspects of the education on offer. With a healthy cooking initiative, this can be achieved through the successful empowerment of all the stakeholders involved. If the individuals living within lower socioeconomic communities, which healthy cooking initiatives are working with, are to develop as agents of change and are to work towards sustainable participatory processes of change in their communities, they will need the capabilities to achieve this goal they value (Ruger, 2010). If the individual or a community is empowered and supported in developing their skills, they may support others in the community, commencing a layer of sustainability that is independent to the original intervention (Marston et al., 2016).

Humanity presented at its fullest representation provides an individual that is pro-active, energetic, engaged, vital, curious, and self-motivated (Ryan &Deci, 2000). When the individual is performing at their finest level they can apply capabilities that are complete, meet capacity, be responsible, become inspired, overcome, and learn to achieve new skills (Ryan & Deci, 2000). When the opposite side to this becomes an inherent phenomenon within an individual, the spirit can become crushed and diminished and this can bring the individual to the position where there is a rejection of growth and responsibility (Ryan & Deci, 2000). Bandura (1977) would argue that self-efficacy is an important characteristic for an individual concerning learning healthy behaviour. This is due to the learning achieved being reliant on the individual's belief in them self and his/her ability to engage with the specific health behaviour presented to them.

Empowerment, according to Rappaport (1987, p. 121) is the self-determination of one's life through having democratic participation with “both a psychological sense of personal control or influence and concern with actual social influence, political power and legal rights”. One theory that is empirically centred on the wellness and development of the individual, through attending to social conditions that enhance, rather than diminish, the individual’s motivation, is the Self Determination Theory (SDT) (Deci & Ryan, 2008). What is specific about SDT is that the attention is focused on the characteristics of autonomous motivation and controlled motivation of the individual, and not the amount of motivation (Deci & Ryan, 2008). According to SDT, these two motivations are the predictors of performance, relational, and well-being outcomes. SDT proposes these motivations are supported, or can be thwarted, through the degree of three basic human psychological needs being experienced, or not being experienced by the individual. These are: competence, relatedness and autonomy (Deci & Ryan, 2008).

There are two central concepts within SDT, causality orientation and life goals (Deci & Ryan, 2008). Within the concept of life goals, long term goals are placed into two general categories, labelled intrinsic aspirations and extrinsic aspirations (Deci & Ryan, 2008). The focus for the current study, in relation to SDT, is mostly on the concept of causality orientation. Causality orientation general motivations "are (a) the way people orient to the environment concerning information related to the initiation and regulation of behaviour, and thus (b) the extent to which they are self-determined in general, across situations and domains”(Deci & Ryan, 2008, p. 183).

Deci and Ryan (2008) argue that with SDT and causality orientation, there are three important orientations which need to be considered, concerning motivation. These are autonomous orientation, controlled orientation, and impersonal orientation. When there is the occurrence of a strong autonomous orientation for an individual, there will also be ongoing satisfaction. This is provided through the three (competence, relatedness and autonomy) basic human needs being met (Deci & Ryan, 2008). On the other hand, if there is the occurrence of a strong controlled orientation this would have been developed through some satisfaction of the competence and relatedness needs, but the need for autonomy would have been thwarted. Deci and Ryan (2008) argue the impersonal orientation will appear when there is over-all thwarting of the three needs.

Deci and Ryan (2008) argue that all individuals will have a level of the three orientations in accordance with SDT. They argue it is possible for predictions to be made, from the type of orientation in play with specific actions, regarding the various psychological or behavioural outcomes. With autonomous orientation, they argue there will be consistent positive relationships with the individual's psychological health, and regarding health behaviour, outcomes will be constructively enhanced. With controlled orientation there has been a strong association found, linked to diminished well-being. With impersonal orientation, the links are with self-derogation, poor functioning, and the lack of vitality, and symptoms of ill-being (Deci & Ryan, 2008).

Deci and Ryan (2008) found the autonomously motivated individual, who has an experience of freely choosing an action and having self-governance over that action, will fully internalise the action and encounter a sense of volition and self-endorsement. The contrast to this is controlled motivation, where the individual is taking the action through external inputs. These are introjected regulations that can involve controlling direction, punishment, and reward. With controlled motivation the action will become only partly internalized by the individual, who will then be energized for approval motive, avoiding shame, ego-involvements and self-esteem that is contingent Deci and Ryan (2008). The action is not accepted as their own and will only be partly internalised because of these introjections (Black & Deci, 2000). Deci and Ryan (2008) have found that with the controlled individual he/she will feel pressure with thinking, and to feel or behave in a particular way. The two different motivations are energized differently, directing different behaviours, leading to different outcomes.

Providing choice with autonomy when supporting an individual who is learning is important as this will assist with stimulating the individual's autonomous motivation (Kusurkar et al., 2011). Optimal learning and accomplishment for the individual can be achieved when they perceive there is a personal value or when they have an authentic interest in their activity and with SDT this is endorsed through their autonomous motivation (Ryan & Deci, 2000). Providing autonomy means providing participants with a non-controlling, autonomous learning environment. This is not proposing that the facilitator is merely in the background and the participants are left to do everything themselves. Instead, the facilitator would be providing structure with some direction during the workshop, providing participants with a pathway for their learning, with their participation also providing the direction of the learning. Ryan and Deci (2000) would suggest that for this approach the facilitator would be avoiding introjected regulations, external controls (over directing), overpraise (reward), and punishment. Autonomy supported learning means the learners have the position of power, the facilitator takes into account participants' perspectives while acknowledging their viewpoints and feelings, providing them pertinent information with the opportunity for choice and minimizes any pressures and demands (Black & Deci, 2000). In contrast to this is controlled learning, with its pressures which are provided through techniques that are either coercive or seductive, which are forcing the learner's behaviour to have a specific type of response to the control, (Black & Deci, 2000). Generally, this is instigated by putting in place implicit or explicit rewards or punishments (Black & Deci, 2000).

Through the provision of a participatory cooking programme, the participants can be in an empowered position through having control. Through this approach, they have the opportunities for their autonomous motivation to be supported to become the optimal type of motivation, rather than being controlled, where motivation will be thwarted. The participatory approach opening up the autonomous learning environment will provide participants with more opportunity for an experience of volition, or a self-endorsement of their learning actions as they internalise them (Deci & Ryan, 2008). Providing the optimal opportunity for participants to have self-determination over their actions, through participatory discussions and demonstrations, intrinsic motivation will be improved, and their empowerment through learning will have more chance of success. With participants having autonomy with decisions made when applying their learning, and with the direction the learning takes, this will also enhance autonomous motivation. Having this autonomous motivation will generate greater psychological

health and more effective performance with the heuristic types of actions, which "also leads to greater long-term persistence, for example, maintained change toward healthier behaviours" (Deci & Ryan, 2008, p. 183).

2.1.8 Summary

Obesity for many of the world's populations has become a significant public health epidemic, and attempts within many countries, including New Zealand, to stop obesity rising have been unsuccessful (Ng et al., 2014). In New Zealand, the groups with the highest prevalence of obesity are those living in lower socioeconomic communities, Māori and Pacific Islanders (Ministry of Health, 2016). The increase in the worldwide prevalence of obesity has coincided with globalization, with many populations shifting away from the traditional fresh vegetable and fruit-based meals to an increase in energy-dense ultra-processed foods high in salt, sugar and fats, accompanied by a decrease in physical activity (Popkin & Gordon-Larsen, 2004). Rolls et al. (2004) would argue that increasing the consumption of fruit and vegetables for these populations would lead to weight and health improvements that would be highly beneficial.

In 2003 the Labour Government launched its comprehensive evidence-based National Healthy Eating Healthy Action (HEHA) Plan to tackle obesity for all New Zealanders. When the National Party became the Government in 2009, they started to dismantle HEHA and brought it to an end in 2012. This left well-established trends of decreasing levels of physical activity, high blood pressure, a lack of the recommended amounts of fruit and vegetables for much of the population and the increasing prevalence of obesity (Ministry of Health, 2017a) to continue virtually unchallenged through a coordinated approach. Within the health sector from 2009, there has been no national coordinated approach to challenge obesity and related health conditions through a National Strategic Plan. Furthermore according to Swinburn et al. (2011) we need to confront the root causes and drivers of obesity and regulate through policy to tackle the globalized economic system that promotes the growth and consumption of energy-dense food.

The Ministry of Health (2018b) Healthy Eating and Activity Guidelines (EAG) recommend eating plenty of fruits and vegetables and other whole foods high in natural fibre, and low-fat protein products. DHBs are implementing the Ministry of Health

(2015a) Childhood Obesity plan, which includes targeted interventions for those children who are obese or at risk of becoming obese. The (Ministry of Health, 2016) considers the high prevalence of overweight and obese New Zealanders is partly due to the lack of recommended amounts of fruit and vegetables, with only 40 % of the population eating the recommended amounts. Luiten et al. (2016) found in New Zealand a large majority (83 %) of packaged products in supermarkets were classified as ultra-processed foods. The research of Luiten et al. (2016) into supermarket foods in New Zealand found there is no significant price difference between energy-dense ultra-processed foods and less processed foods.

With ultra-processed foods having such significant effects on those living with socioeconomic disparities the risks from the over consumption of these foods to these populations should not be ignored. Healthy cooking interventions have shown they can have positive outcomes in relation to the consumption of fruit and vegetables. However further research is needed into healthy cooking programmes that are generating an effective experience for the participants. This is an experience specifically working to develop participants' autonomous motivation through interactive learning, where participants provide much of the learning direction and outcomes through their participatory discussions with all.

Chapter 3: Research Design and Methodology

Introduction

The first section of this chapter deals with the research question with four sub-questions, followed by the aim of the research and the objectives. The quantitative and qualitative methods are then discussed, followed by the rationale for developing a mixed method design, and how this is considered the optimal methodology for answering the research question. The second section of this chapter discusses the rationale for choosing to work within the paradigm of dialectical pragmatism and how this paradigm fits with the mixed methods design. This section explains how the pragmatic stance framing the methodology leaves the researcher unhindered by the diverse epistemological views that can be found within mixed methods research. This is then followed by explaining who the participants are, the enrolment process, the procedure, with a timeline, and the approach that was used for the analysis of the two different sets of data. The next section is the Ethics section, and this is with the Treaty of Waitangi considerations that are discussed.

3.1.1 Research question

Do primary caregivers use more vegetables in the family meals after learning, from an interactive cooking programme, a range of skills and information for preparing and cooking different vegetable-based meals from scratch?

Four sub-questions were also developed to guide the research focus:

a. do the participants improve their knowledge of healthy foods?

b. do the participants improve healthy cooking skills?

c. do participants develop a better understanding about purchasing healthy foods for cooking home meals?

d. has there been a reduction of the unhealthy ultra-processed foods, due to the increased cooking of vegetables, served in the participants family meals?

The aim of the research is to evaluate the effectiveness of this programme from the perspectives of the participants in the programme. Exploring participants' eating and cooking practices and how they are affected by the cooking programme learning, what

they achieve from the programme and what affects the programme has on their cooking and eating behaviours at home with the family.

Research objectives

The research objectives are:

- to recruit and enrol the primary caregivers (parents or caregivers) of children living in three different lower socioeconomic communities in the BOP, as participants of the cooking programme and the research.
- through four focus groups sessions, with a set of open-ended questions for each session, gain the perspectives of each group of participants' about attending the cooking programme.
- during the focus groups sessions, gain the participants perspectives of cooking adjustments made at home after they attended the cooking programme.
- gain each participant's pre and post programme cooking and eating perspective, through two surveys with sets of Likert scale questions.
- keep a reflective research journal to capture the participants' repetitive comments made during the cooking workshops.

3.1.2 Mixed methods design

Using a mixed method design, both quantitative and qualitative data was collected. These were predetermined and fixed at the design phase and implemented as planned. Using a methodology with mixed methods design was considered the suitable approach for answering the research question since "multiple levels and types of reality should be routinely considered and interrelated" when exploring a phenomenon of interest (Tashakkori & Teddle, 2010, p. 38). Furthermore, the use of mixed methods was the preferred approach, because using the two methods may help answer questions that could not be answered by quantitative or qualitative methods alone (Creswell & Plano, 2017).

The chosen mixed methods approach is current and has continued in its development, from origins in the late 1980s and early 1990s, after being fostered by

various individuals in the research fields of evaluation, management, education, sociology, and the health sciences (Creswell, 2009). The chosen typology for the mixed methods aim, is for a convergent design (previously referred to as triangulation) where the two different sets of data resulting from these methods are analysed, then can be brought together to be compared and combined (Creswell & Plano, 2017).

Procedures

The procedures used in the methods for the collection of data are:

- Quantitative pre-cooking programme survey with 11 questions within Likert scale format, with a choice of five answers for each question.
- Quantitative post-cooking programme survey with 11 questions in a Likert scale format, with a choice of five answers for each question, and one further question with an answer choice of yes or no.
- Qualitative Group discussions through focus groups after each cooking workshop where the participants were asked a set of five open-ended discussion questions for each of the workshops.
- Comments often repeated by participants during cooking workshops that were considered significant to the research were noted by the primary researcher as field notes.

The quantitative data was collected to develop a generalized numerical description of the participants cooking and eating practices before and after the cooking programme. Qualitative data was also collected through focus group discussions to explore how features relative to the participants cooking and eating are developing during the programme. The assumption is that the results from closed-ended quantitative Likert scale questions and the open-ended qualitative focus group questions would be validated against each other during the analysis, through defining the resemblances between the two sets of data. Through taking this collaborative approach with the deductive (quantitative) and the inductive (qualitative) methods, the scope of the investigation will be widened. The data collected will be more comprehensive than that from a single method, when describing, explaining, and evaluating the outcomes (Leavy, 2017). Through the combined methods there will be a systematic structure from the quantitative method and flexibility from the qualitative, and the joining of strengths

from using two methods will provide a deeper understanding (Creswell, 2009) of the participants' cooking and eating practices before, during and after the cooking programme.

3.1.3 The paradigm within research

The research paradigm, sometimes referred to as a worldview, is a perspective or set of shared beliefs, or school of thought, or thinking that frames the methodology and informs the meaning of the research data (Mackenzie & Knipe, 2006). Within methodologies, there can be a plethora of distinctly different philosophical frameworks, and "each methodology can bring with it its unique view (paradigm) when researching phenomena of interest" (Nicholls 2009). Central to the paradigm is the philosophical approach in the methodology and there are a vast number of methodologies that all have their own distinctly different philosophical frameworks (Nicholls, 2009).

Guba and Lincoln (1982) would argue that every paradigm is an "axiomatic system that is characterized by its own different sets of assumptions for exploring the phenomenon of interest. The research paradigm is based upon the research ontological and epistemological assumptions and it is comprised through the workings of the ontology, epistemology, methodology and method (Scotland, 2012). Each paradigm with inherently different ontological and epistemological positions is bringing different assumptions of knowledge and reality that are underpinning the paradigm's particular theoretical approach within the research (Scotland, 2012).

Ontology and epistemology

Ontology is the understanding of the nature of being, as ontology "is concerned with 'what is', with the nature of existence, with the structure of reality as such" (Crotty, 1998). Epistemology is what it means to know, it is exploratory and is preoccupied with how knowledge can be created, acquired and communicated, and it has a contextual relationship with ontology (Scotland, 2012). Ontology, sitting alongside epistemology, will inform "the theoretic perspective of the research, as each theoretical perspective embodies a certain way of understanding what is (ontology) as well as a certain way of understanding what it means to know (epistemology)" (Crotty, 1998, p. 6). Biesta (2010) claims that it is a mistake to think that the assumptions that underpin the research

are only a matter of belief (or conversion) to the chosen paradigm, and then this paradigm would become an excuse to not engage in discussion regarding the assumptions that have underpinned the research.

Objectivism and the positive paradigm

Historically, health care research was almost exclusively quantitative research. During these times this was the position of positivism (objectivism), as this was the gold standard and the prerequisite for the ideology of health research, that was considered to be unbiased and objective (Doyle, Brady, & Byrne, 2016). Objectivism is the stance that underpins the epistemological view within the rationalistic or positive paradigm. Objectivism is the theory that things that exist are meaningful entities, that are independent of consciousness and experience and they have truth and meaning that resides within, "as objects ('objective' truth and meaning, therefore), and that careful (scientific?) research can attain that objective truth and meaning" (Crotty, 1998, p. 6).

The post-positive paradigm

The fundamental concept of the positive paradigm argues determinism has a determinable cause and actions have predictable outcomes. This concept was challenged, resulting in the appearance of the post-positive paradigm that has the aim of searching for the objective truth of reality (Grant & Giddings, 2002). The positive paradigm was eventually adapted and fitted into the viewpoint of the post-positivist, to consider that cause and effect is not a linear process, rather it is a range of complex consequences with causative factors, and they are interacting with each other (Giddings & Grant, 2006).

Tashakkori and Teddle (2010) argue that many of today's quantitative researchers are, philosophically speaking, mostly post-positivists. They argue that post-positivism is a philosophy of science incorporated with "many of the criticisms of positivism and accepts the following positions: (a) theory-ladenness of facts, (b) fallibility of knowledge, (c) underdetermination of theory by fact, (d) value-ladenness of facts, and (e) social construction of parts of reality" (Tashakkori & Teddle, 2010, p. 19). Tashakkori and Teddle (2010) consider that with the developments which have been

made through post-positivism, the fact that some writers are still attributing the long-dead philosophy of positivism to quantitative research is unfortunate.

The paradigm for a methodology with mixed methods

This research methodology, with the two different philosophical standpoints and methods, would be considered by many to have conflicting views (Guba & Lincoln, 1982). The quantitative data analysis will have the epistemological position of the post-positivist (Tashakkori & Teddle, 2010). The qualitative data will be analysed through using Braun and Clarke (2006) Reflexive Method of Thematic Analysis. The epistemological positions in Braun and Clarke (2006) reflexive method tends to be either the constructionists or the essentialist (realist) or, in some situations, as with this research, both approaches can be used. The paradigm of dialectical pragmatism effectively functions as a "middle philosophy" in the methodology, as it accepts the interaction of all these different philosophical standpoints within the method and the analysis (Tashakkori & Teddle, 2010).

Dialectical pragmatism the paradigm for the research

Dialectical pragmatism is considered to meet Houghton, Hunter, and Meskell (2012) directions, for the optimal integration of the aims, methods, epistemological and ontological assumptions of the methodology, and provides this research with philosophical and ontological congruity. Through the pragmatic stance of dialectical pragmatism, the research will not be hindered by the diverse philosophical standpoints during the analysis of the data, presented when using two different methods. The theoretical approach of dialectical pragmatism will function proficiently as an effective "middle philosophy" in the methodology, by providing the required emphasis on corresponding the interaction between the different philosophical standpoints of the two methods (Tashakkori & Teddle, 2010). Dialectical pragmatism will provide both philosophy and anti-philosophy for the two opposing methods as it rejects dualisms and philosophical quagmires (Tashakkori & Teddle, 2010).

Through dialectical pragmatism the researcher is able to create and construct the approach and design with sets of working assumptions, through the position of perspectival epistemology and by rejecting "monisms, reductionisms, and dogmatisms"

as it "suggests that we search for 'workable solutions' to what we consider problematic in our world" (Tashakkori & Teddle, 2010, p. 27). Through this position, the researcher can examine and reconstruct assumptions as well as philosophical commitments, and still take the other philosophical and paradigmatic positions seriously (Tashakkori & Teddle, 2010). This theoretical approach, with its multiple methods, can focus on continuing the improvement of the human condition while operating within the circle of hermeneutic interpretivism (Tashakkori & Teddle, 2010).

3.1.4 Participants

The participants were three groups of parents and caregivers of children living in lower socioeconomic communities within the Western Bay of Plenty. Participants registered their interest to participate in the cooking programme through their BOPDHB Public Health Nurse (PHN) or a Māori Health Provider working with the PHNs. The first group were from a decile 3 primary school and their group abbreviation is G1. The second were clients of a Māori Health Provider within a rural community and their group abbreviation is G2. The third group were from a Kohanga Reo and Marae Community and their group abbreviation is G3.

Table 1 below provides the demographics of the participants. These are the group numbers for each of the participants, either 1, 2, or 3, their age range, status to the child or children in their care, sex, ethnicity and the number of workshops with focus groups each participant attended.

Table 1. Participant's demographics

Group	Age range	Status	Sex	Ethnicity	Number of workshops with focus group each participant attended
1	21- 30	Father	Male	Māori	2
1	41- 50	Mother	Female	European	4
1	31- 40	Mother	Female	European	3
1	-	-	Female	South American	3
1	31- 40	Mother	Female	European	4
1	21- 30	Mother	Female	Māori	4
2	21- 30	Mother	Female	European/ Māori	4
2	-	Father	Male	European	4
2	21- 30	Mother	Female	Samoan	3
2	51- 60	Grandmother	Female	Māori	1
2	-	Grandmother	Female	Māori	1
3	61- 70	Grandmother	Female	Māori	4
3	61- 70	Grandmother	Female	Māori	3
3	51- 60	Grandmother	Female	Māori	4
3	41- 50	Father	Male	Māori	4
3	31- 40	Mother	Female	Māori	4
3	21- 30	Mother	Female	Māori	3
3	51- 60	Grandfather	Male	Māori	1

3.1.5 Research assistants and procedures

As the primary researcher is the cooking programme facilitator, this could be perceived as a possible power imbalance. The decision was made to have research assistants to interact with the participants during the research to minimise any risk of a power imbalance. Only the research assistants interacted with participants during the enrolment, consent processes, explaining the information sheet, providing any assistance, completing the survey and facilitating the focus group discussions. The primary researcher only interacted with the participants when teaching the cooking workshops and was not aware who the research participants were within each group.

Recruitment of participants for enrolment

The PHNs and the Māori Health Providers engaged in conversation with primary caregivers of children who were living in the lower socioeconomic communities they worked in. They provided the primary caregivers with a brief verbal overview of the cooking programme and a promotional flyer (Appendix C). The primary caregivers were informed that participating in the cooking programme would be free of cost and childcare would also be available at the venue for the children they might need to bring. The primary caregivers who wanted to be referred to the cooking programme would contact the PHNs to inform them they had an interest in attending. The PHNs then completed a referral form and emailed this referral to the first research assistant (Appendix D).

The first assistant contacted the potential participants by phone or text. This was from one month and up to two months before the start date of the cooking programme. Once the communication lines were established the potential participants were then asked by the assistant if they still had an interest in enrolling in the cooking programme. If they agreed they would like to participate in the cooking programme the assistant enrolled them and provided them with venue details, dates and times for workshops. These participants were given a brief overview of the cooking programme and the research was explained to them. They were informed that if they wanted, they could also participate in the research and this would be explained in more detail on the day of their first workshop. This was when they could make the final decision about participating in the research or just in the cooking programme.

All the participants enrolled in the cooking programme were contacted again one week before the start date of their programme. This was to confirm they were still interested in participating in the cooking programme, to clarify any details given earlier and to answer any questions they might have about the cooking programme or the research. All the participants who took part in the cooking programme also agreed to take part in the research.

Enrolment of participants

On the first day of each of the groups' cooking programme workshops, the first procedure implemented with the participants was their enrolment into the research, and the consent process. The participants each received the research information sheet (Appendix E) from the research assistant. The research assistant would then explain the information on the sheet to the participants and answer any questions the participants asked. The research assistant provided support for reading and writing if it was needed. It was explained to all the participants that they did not have to participate in the research and, if they wanted to, they could participate in the cooking programme only. When the participants agreed they would like to participate in the research they were asked to complete the consent form. When the participants had completed the consent forms, they gave them to the research assistant.

Pre-cooking workshop survey

Phase one of the data collection was the method of collecting quantitative data. This was through a pre-cooking workshop survey, using eleven five-point Likert scale questions (Appendix F). Before participants started their first cooking workshop, the research assistant provided all the participants with the pre-cooking workshop survey. This was in a private setting where support for reading and writing was provided if needed. Participants were asked if they wanted to complete the survey, and if so, to circle one of the five answers provided for each of the questions. When the participants had completed their surveys, they gave them to the research assistant. The research assistant then secured these documents with the management of CH4K in a locked cabinet.

Cooking workshop

The participants then took part in a three-hour cooking workshop with a 10-minute break for refreshments. When the cooking workshop was completed the participants took part in a half-hour lunch where they consumed the meal they had prepared for lunch.

Focus group discussions

Phase two was the method used for collecting qualitative data. This was facilitated through focus group discussions after each of the four cooking workshops and the lunch breaks. The focus groups took place in a private setting and the primary researcher was not present in the room. The participants were asked, by the research assistant, a set of open-ended discussion questions (Appendix G). During the focus groups, participants were encouraged to have conversations about the discussion questions rather than specifically answering the question as an individual, although this sometimes would still happen. The facilitator would ask the participants a discussion question, and sometimes follow up questions, to encourage more conversation or to gather more information from participants. Due to the free-flowing format with the focus group conversations, names were not used for the participants, either in the recordings, field notes or transcripts. In writing up the transcripts, when each different participant spoke, they were given the name "participant", and when a facilitator spoke or asked a question, they were given the name "speaker". For the data used in the results, when the first or only participant made the statement (spoke) in the data extract (paragraph) no name was provided. When the second participant or even third participant made a statement within the piece of data that had been extracted (e.g. same conversation) they were given the title *participant 2*, or *participant 3*, and so on. The focus group facilitators are referred to as “Speaker” with any data extracts involving them. All documents and recordings collected during the research process were stored at the CH4K office in a locked cabinet.

Post-cooking workshops survey

Phase three was the method used for collecting further quantitative data. This was through a post-cooking-workshop survey using a set of predetermined Likert scale

questions (Appendix H). This survey used the same questions written for the pre-workshop survey; however, these questions had been adapted, to be asked after the participants' final workshop. One extra question was also added, asking for a yes or no answer. Between lunch and the focus group, the research assistant provided each participant with the survey. This was in a private setting where support for reading and writing was provided if needed. The total number of pre- and post-workshop surveys completed was 15.

Two of the participants (one from G1 and one from G2) did three workshops and notified the research team they could not attend their fourth, and last, workshop. These two participants were mailed post surveys, with a pre-paid addressed envelope. One of these participants posted back a completed post-workshop survey. The other participant did not return the post-workshop survey. The number of pre and post surveys that were jointly completed and returned by the same participants was fifteen.

3.2 METHOD OF ANALYSIS

3.2.1 Quantitative analysis

The quantitative data was drawn from the pre-workshop surveys and the post-workshop survey replies. The Likert scale data from the pre-workshop and post-workshop surveys was entered into an Xcel spreadsheet and analysed using descriptive statistics.

3.2.2 Qualitative analysis

All eleven focus group recordings were transcribed into a Microsoft Word format. The primary researcher read all the transcripts while listening to the recordings, sometimes pausing and replaying the recordings to authenticate the words written, or to correct any mistakes. The number of corrections made was minimal and some words were added that had been left off by a transcriber. There were a small number of words spoken by participants on the recordings which could not be identified by a transcriber or the researcher. These were left out of the transcribed sentences. In all of these situations, the statements with in each of the sentences were still able to be identified. All the transcripts were then uploaded into NVivo 11 software for analysis. Each

transcript, once uploaded into NVivo, was named, and then stored into a separate file in the NVivo software for the data, (the source file).

Thematic analysis

The approach used for the analysis of the qualitative data was Braun and Clarke (2006) Reflexive Method of Thematic Analysis. Through using Thematic Analysis as the method of analysis, the researcher gains the theoretical freedom it offers and there is the potential to use the tool to deliver a detailed and a rich, yet complex, account from qualitative data (Braun & Clarke, 2006).

An inductive or deductive approach to thematic analysis

With Thematic Analysis the themes or patterns found within the data can be identified through one of the two primary approaches, the inductive, or the deductive (theoretical) approach (Braun & Clarke, 2006). This is an important aspect to consider with Thematic Analysis. The approach used, either the inductive or the deductive, would map on to the *why* and *how* of coding the data, as you are either coding for very specific questions (deductive theoretical approach) or the research question will evolve through the process of coding (inductive approach) (Braun & Clarke, 2006).

Using the inductive approach, when identifying themes, would mean the themes would be strongly linked to what was said within the data (Patton, 1990). Using the inductive approach when identifying themes means they may have only a small relationship to the question that the participants were asked (Braun & Clarke, 2006). An inductive approach is a form of Thematic Analysis, that is data-driven, not driven by the topic or theoretical interest of the researcher, and the method of a pre-existing coding frame would not be used (Braun & Clarke, 2006).

When first identifying data (coding), to extract for potential themes, the approach used in this study was deductive. Through the deductive approach, the researcher's areas of interest were driving the search when identifying potential themes, through a theoretical and analytic stance (Braun & Clarke, 2006). With the deductive approach, the data extracted for further analysis was not considered to have full and rich characteristics, as it would when extracted through using an inductive approach (Braun & Clarke, 2006). Rather it was more about the details of certain aspects within the data

that would provide a more detailed analysis which was directly relevant to the phenomena of interest (Braun & Clarke, 2006).

Level of identification within themes, semantic or latent

When using Thematic Analysis and after identifying themes it is important to understand the level of identification, within the approach taken; these levels of identification of themes can either be at the semantic level or latent (interpretive) level (Boyatzis, 1998). When identifying themes at the semantic level, the researcher is not looking beyond the surface level (explicit) meaning, in a way that is straight forward (Braun & Clarke, 2006). A contrast to this would be the identification of themes at a latent (interpretive) level. This would go beyond the semantic level within the data, being about examining or identifying underlying ideas and assumptions, while theorising and shaping the semantic content in the data (Braun & Clarke, 2006).

Shared meaning patterns

Braun, Clarke, and Rance (2014) explain that it's important to understand how "a theme" is conceptualized. There are two competing ideas in Thematic Analysis. The first one is domain summaries and the other is shared meaning-based patterns. Braun et al. (2014) view themes as a reflection of a pattern of shared meaning that is organised around the core concept and a central organising concept. The themes conceptualized within the thematic analysis for these results were established using a shared-meaning-based-patterns approach.

Epistemological position

With Thematic Analysis the researcher needs to understand they are not freed from their theoretical and epistemological commitments, and should not be coding the data within an epistemological vacuum (Braun & Clarke, 2006). When analytically identifying themes considered latent or interpretative, the researcher would tend to take an epistemological view of the constructionist Braun and Clarke (2006). In regards to reality, the view of the constructionist is concerned with the production of knowledge, and the ways that "knowledge is historically situated and embedded in culture, values and practices" (Galbin, 2014, p. 89). The challenge with the constructionist stance,

methodologically, is not to persuade or prove to others the correct interpretation of the phenomenon; it's about broadening possibilities of understanding, as this can foster communication, dialogue and integration of perspectives (Galbin, 2014). Burr (1995) argued the perspective of the constructionist is that meaning and the experiences are socially produced, then reproduced, rather than inferred within individuals (as sited in Braun & Clarke, 2006). The constructionist will seek to theorise on the social-cultural contexts that have enabled the accounts provided by the individual within the chosen phenomenon (Braun & Clarke, 2006).

Opposite to the epistemological position of the constructionist, is the essentialist or realist. With acute differences in characteristics, this is the position used when theorising the semantic or the explicit (surface level) meaning of the themes while describing what was said (Braun & Clarke, 2006). Through the view of the essentialist or realist, identifying the surface level meaning in themes, the researcher is not looking beyond what the participant has said (Braun & Clarke, 2006). The essentialist/realist theorises on "motivations, experience and meaning in a straightforward way" (Braun & Clarke, 2006, p. 85). Braun and Clarke (2006) agreed with the theory (as cited in Potter & Wetherell, (1987); Widdicombe & Wooffitt, (1995) that a simple and largely unidirectional relationship can be assumed between meaning and the experience in language, as the language is reflecting and enabling the articulation of meaning and the experience. Braun and Clarke (2006) acknowledge that either one of these epistemological positions would be the view used for theorising the level of meaning in themes. They accept this is not a firm rule, and the collective approach using both epistemological views for theorising the meaning in themes is also acceptable. During the analysis, the researcher was using the epistemological views of the constructionist for theorising at a latent or interpretive level, and the essentialist/realist view, for theorising at the semantic explicit level.

Six phases of Thematic Analysis

Braun and Clarke (2006) recommend that when using Thematic Analysis, the process of analysis should be done in six phases. These are familiarisation, then generating the initial codes, searching for the themes, reviewing the themes, defining and naming the final themes, and producing the report (Braun and Clark (2006). The Thematic Analysis proceeded with:

- *Phase 1*

The first phase of Thematic Analysis according to Braun and Clarke (2006) is the familiarisation phase. During the familiarisation phase, before the second phase of coding had even started, the focus was for the researcher to become immersed within the data through repeated reading of the entire data set. All of the data was read four times and, as Braun and Clarke (2006) recommended, the researcher was also looking for meaning and patterns within the data.

- *Phase 2*

The second phase was generating the initial codes within the data, by identifying both the semantic and latent content of interest, while focusing on the level of meaning within the conversations. The transcripts now within NVivo were carefully read and sections of data with a similar meaning were selected (extracts) and stored within files called nodes. These node files with the data extracts were given names relevant to the meaning of the selected extracts. During this phase, the researcher decided some content in the conversations was notably rich and this would suit being explored at the more latent (interpretive) level, while other conversations had a straightforward, explicit meaning and were considered to fit the semantic level. This approach was feasible through using the views of the constructionist and the essentialist/realist when theorising the level of meaning, and by exploring the research through the paradigm of dialectical pragmatism (Tashakkori & Teddle, 2010).

- *Phase 3*

The third phase was searching for themes and organising the data extracts into candidate themes. The development of themes is achieved through interpretative analysis, where the researcher is searching for data relevant to the phenomenon of interest being explored (Boyatzis, 1998). Within NVivo, the data extracts that were considered to fit into a theme were selected from the extracts node and placed within another node. These nodes formed the first stage of developing the themes (candidate themes) and each of them was given a name that was relevant to the meaning of the theme.

- *Phase 4*

The fourth phase involved reviewing themes. As Braun and Clarke (2006) recommended, the researcher first reviewed all the candidate themes, then refined these

themes. Within NVivo, the researcher read all the collected extracts for each candidate theme and decided on where the coherent patterns were appearing. It became evident that some of the candidate themes were not really themes. As (Braun & Clarke, 2006) specified, the extracted narrative that was supporting the themes needed to be strong enough, or not too diverse, to be the appropriate narrative for a final theme. Also, as suggested by Braun and Clarke (2006) with the Reflexive Method, some other themes were collapsed into each other to become one theme. The researcher made sure that the extracts within themes corresponded meaningfully, and there were clear distinctions between themes that were easily identified (Patton, 1990).

- *Phase 5*

The fifth phase was defining the candidate themes into the final themes and naming them. This was done in the NVivo software. During this phase, as Braun and Clarke (2006) recommended, for each theme, the researcher examined the collated extracts of data, then organised them into an internally consistent and coherent account that had an accompanying narrative. This was done through defining themes, then the further refinement of the themes. This meant identifying "the ‘essence' of what each theme is about (as well as the themes overall) and determining what aspect of the data each theme captures" (Braun & Clarke, 2006, p. 92). As they suggested, it was important to try to not get the theme to do too much, or to be too complex or diverse. The final product was three primary themes, each with sub-themes that had all been fully developed.

- *Phase 6*

The sixth phase was writing up the Thematic Analysis. This involved extracting data embedded within the analytic narrative within the final themes, to provide an argument by illustrating a compelling story, that was relative to the research question (Braun & Clarke, 2006). This was achieved from a view of the participants through the researcher’s processes. Field notes that were made during workshops were also used in the writing of the qualitative data. This was to support the data drawn from the thematic analysis, or to emphasise key points made during workshop discussions.

3.3 ETHICS

Ethics Application 17/210 Creating Healthy Food, Building Healthy Families:

Ethics approval was given for the research of 17/210: 'Creating Healthy Food, Building Healthy Families' by the Auckland University of Technology Ethics Committee AUTEC on 7th August 2017. This approval also included the Participants' Information Form and the Consent Form for participants providing their consent to participate in the research (Appendix I).

3.4 TREATY OF WAITANGI

According to (Thomas, 2000), when addressing self-efficacy through an intervention, the larger social context and the up-stream social factors of those participating should not be ignored, as the intervention is aiming for change with life style behaviours that are voluntary, and to consider these as a separate issue may result in the intervention failing. When ascertaining features concerning the participant's larger social context, it was considered, two imperative features that will be addressed are that the majority of the participants are of Māori ethnicity and all the participants are from lower socio-economic communities. Within the research project, and with the development of the programme, it was considered paramount to aim to address all ethical procedures concerning the Treaty of Waitangi. Beauchamp and Childress (1982) found, in general, the principles for ethical health research are having respect for others and their autonomy, non-maleficence, beneficence and justice, and these are considered universal in nature and should apply to all cultures and societies. Hudson (2004) argued these are generally understood to be universal principles regarding ethical health research. However Hudson (2004) argues that there needs to be another set of ethical principles. These are for Māori issues and their concerns, and these principles need to be addressed within all New Zealand research, for Māori to achieve at their full capacity and advance their aspirations. Smith, as cited in Carpenter and McMurchy-Pilkington (2008) argues that research with Maori in the past has only produced minimal benefits, and has not produced strategies that have created change; rather it has just emphasized negative statistics. Hudson, Milne, Paul, Russell, and Smith (2010) argue that all research that includes Māori is paramount to Māori, and Māori consider that all research within New Zealand is of interest to them.

The principles of partnership, protection, and participation within the Treaty of Waitangi were observed within the research. This included addressing concerns for Māori that may not be recognized or derived through the ethical standards within the

western world view. Hudson (2004) argued the ethical concerns within a Māori world view should be considered as a significant part of research. According to Durie (1985, p. 484) the thinking of Maori can be described as holistic; “understanding occurs less by division into smaller and smaller parts, rather by synthesis into a wider, contextual system”. Jackson, as cited in Pere and Barnes, (2009) argues that Māori perceive images differently and this should be considered with Māori research, noting that even though Māori and Pakeha are coexisting within society, perceptions and insights between them are different, and this variation is on a continuum.

To address these concerns and other concerns of Māori through the development of the cooking programme and the research project, Māori issues continued to be discussed with Māori stakeholders, including past participants. This consultation aimed to ensure that the Māori world view was respected and that Tikanga and cultural concepts were acknowledged in the development of the programme and the research methodology. The use of protective mechanisms regarding cultural and intellectual property of the participants, such as photographic material provided of participants and whānau, were put in place. Culturally appropriate processes when possible were also put in place. The cultural diversity of the participants was always respected during the cooking programme, as was Māori Tikanga. This included having Karakia (a blessing) that took place before all the workshops began and before the meal, bringing closure to the workshops and the blessing of the food to be eaten.

Kanohi-ki te kanohi, (face to face) in-person interaction is considered a valid method by (Carpenter & McMurchy-Pilkington, 2008) for empowering participants in cross-cultural research between Pākehā (European) and Māori. Through face to face consultation with the Māori providers and participants over nine years, the cooking model has been continuously developing and improving. Over these years, at the end of the cooking workshops and after lunch, the participants were happy, relaxed and very talkative providing feedback about the cooking programme and how it could become more relevant and effective for them, Māori people and their lifestyles. This openness and relaxed talkative environment taking place at the end of each workshop and lunch, between participants as individuals sharing their thoughts was considered a very effective procedure that can be used to gather relevant data for the current study.

The Reducing Inequalities Intervention Framework Health Equity Assessment Tool (HEAT) also guided the development and implementation of the cooking programme (Signal, Martin, Cram, & Robson, 2004). This was to ensure the inequalities

within health, for Māori, were not inadvertently widened. An Active portfolio Manager of Māori Health provided advice and support when consulted about the development of the cooking programme model over the ten years and supported the progress of this research project in 2017. This consultation included valuable input about working in partnership with Māori communities, Hauora and Māori Health Providers.

The ethical standards and the Treaty of Waitangi were discussed with the research assistants. This was to ensure that everyone involved in the research project had a clear understanding of the Treaty of Waitangi, and the ethical standards that were to be upheld during the research project and the cooking programme.

The 1st research assistant was a student at Toi- Ohomai Institute of Technology Tauranga, completing a Bachelor of Community Health. The relevant papers the 1st research assistant had completed in the degree were level 5 & 6 Hauora one, Māori Models of Health, Treaty of Waitangi and Korowai Oranga and how to incorporate the Treaty of Waitangi into Professional Practice.

The 2nd research assistant held a PhD Sc and was an academic Staff Member of a Tertiary Institute. The 2nd research assistant had lectured on the subject of the Treaty of Waitangi. During the development stage of the research project, the 2nd research assistant and the primary researcher were involved in consultation about the aspects of the research relating to Māori. The 2nd research assistant provided support, and agreed to continue to provide support, regarding Tikanga Māori, the Māori world view and the Treaty of Waitangi during the research (Appendix J)

Chapter 4: Results

Introduction

In this Chapter in the quantitative results the total demographic of the participants is presented in a table format. The qualitative results section states, and reiterates, procedures that underline the Thematic Analysis process to provide clarity about the important measures taken to obtain the results. Quantitative results obtained from the questions in the pre- and post-workshop surveys have been combined to support themes within the qualitative results and are presented in a graph format with commentary. The remaining quantitative results from the survey questions are presented in the appendices.

Quantitative results

Seventeen participants completed the pre-programme surveys and fifteen of them completed their post-programme survey. As the surveys are a tool to explore the participants cooking and eating behaviours before and after the programme only the surveys by the fifteen individuals that completed both pre and post surveys were used for the results. The results are presented as a percentage, and as the 15 individuals, for each of the 11 pre-programme questions with the corresponding post-programme question. Quantitative results from the survey questions are compared with the qualitative results and when the results are applicable to each other they are combined in with the qualitative results. All survey quantitative results are presented in Appendix K. The participants were all primary caregivers of children in their households, and they ranged in age from 21 to 70 years old. The majority were female, and of Maori ethnicity.

Table 2. Total demographics of the cohort

	Total	Total	Total	Total	Total
Age range	21-30 4	31-40 3	41-50 2	51-60 2	61-70 2
Status to children in their care	Mothers 9	Fathers 3	Grandmothers 6	Grandfathers 1	
Sex	Females 15	Males 4			
Ethnicity	Māori 12	European/ Māori 1	Samoan 1	South American 1	
Total attendance for workshops and focus groups	First workshop: 15	Second workshop: 16	Third workshop: 17	Fourth workshop: 14	
Participant numbers for each group	Group 1 7	Group 2 5	Group 3 7		

Qualitative results

Eleven focus group discussions with the participants had been recorded after the cooking workshops, and they were written into transcripts for the thematic analysis. The total number of participants that took part in the eleven focus groups was seventeen. Repetitive comments made during the cooking workshop were noted in the primary researches reflective journal. The data gathered from the focus groups discussions was thematically analysed using the Braun and Clarke (2006) approach. As suggested by Braun and Clarke (2006), with this approach to theme development, no pre-existing coding frame was used. Central to the development of themes was the research question, and the premise for this question came from the aim and objectives of the cooking programme, refer to section 3.1.1. Through the analysis, the themes were developed, and these themes will provide a story about the participants' empowerment through learning how to cook healthily. Each theme tells an important part of this 'story' overall, and the essence of these themes have been discovered within the data set from the focus groups (Braun & Clarke, 2006). Four supporting statements to themes evident with in the researcher's reflective journal are added as supplementary support to the themes. The themes themselves were considered with regards to the other themes,

and as part of the refinement of two concept themes. The themes were also identified as containing essentially themes-within-a-theme, sub-themes (Braun & Clarke, 2006). Results within themes can also be presented and interwoven throughout other themes and sub-themes through this chapter as they can be closely interconnected.

As discussed in the method of analysis, Braun et al. (2014) explain that it's important to understand how "a theme" is conceptualized, and there are two competing ideas in Thematic Analysis. The first one is domain summaries and the other is shared meaning-based patterns. Braun et al. (2014) view themes as a reflection of a pattern of shared meaning that are organised around the core concept and a central organising concept. The themes conceptualized within the thematic analysis for these results were identified through using a shared-meaning-based-patterns approach.

Presentation of the qualitative results

Due to the method of free-flowing group discussions being used for the focus groups sessions no names were added to the participant statements. With data extracts used in the results, when the first or if only one participant made a statement (has spoken) within the data extract (a following sentence by another participants), no title is provided. When a second participant or even third participant made a statement within a data extract, they are given the title "Participant 2", or "Participant 3", at the beginning of their statement. The focus group facilitators are referred to as "Speaker" for any data extracts involving them. At the end of each data extract, the group number that the data extract came from is shown e.g. G1 or G2. Next to this, there is a "W" for the workshop and the workshop number "1" or "2" for the 1st or 2nd workshop, e.g. Group 1 Workshop 2 is (G1/W2).

4.1.1 Themes

Three themes were identified from the data, with sub-themes for each of the categories. These are illustrated in Figure 1.

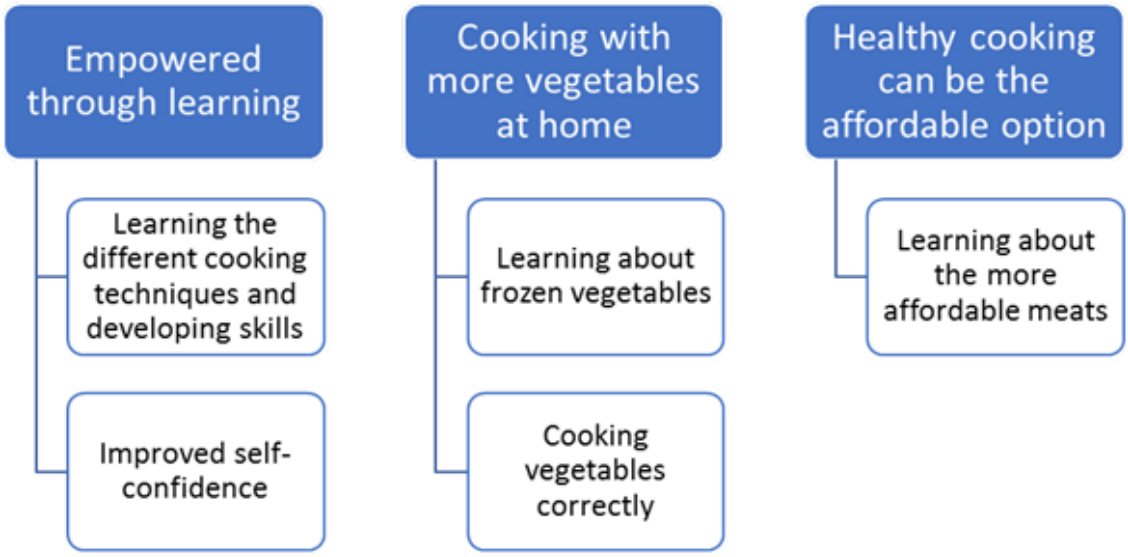

Figure 1. Visual representation of themes with sub-themes.

4.1.2 Theme one: Empowered through learning

The results showed a strong association between the participants becoming empowered by their learning and wanting to implement what they have learnt. Participants enjoyed the method used for delivering the education during the cooking programme. The chef would explain the theory about the different health aspects and the cooking techniques, through interactive group conversations and questions. Then they would observe the chef putting the new technique into practice, followed by them implementing what they learnt while making the meal together as a group. There was a lot of agreement that the method for delivering the healthy eating and cooking learning worked well for them.

> *I think this is really fantastic it's a new thing for us and it's a new beginning and something that is going to be ongoing. The chef is really good on how he presents his cooking class and as a group you know we are getting on good together* **G3W1**.

From observation during the workshops, it was noted that participants liked the group learning and how the cooking tasks were distributed to everyone evenly. They all wanted to be kept active, so they enjoyed being given or taking on different tasks, even if this was sometimes just the dishwashing. When they needed more directions or help with cooking the meal, this was available, as the participants would ask the chef, e.g. How much of this do I put in', or, 'Is this okay?

> *We fire questions at him all the time and he answers them most of the time. If he is busy doing something he has to stop and think. There were lots of questions asked about the different techniques about our cooking class today and a couple of times he was really busy, you know making sure the oven was on, so he was concentrating, then someone said something, then he stops he's got to think and then he will answer the question. We are all down to earth and I think we can learn a lot from each other* **G3/W1.**

Many of the participants found repeating the new learning and the cooking techniques they were shown also worked well for them, as they thought there was a lot to learn during the four-week programme. They found bringing what they had learnt on one day, back into the following workshops was great for them during the programme, as this helped them with retaining the learning.

> *For me it was learning something new at every programme he took, so that was really awesome. Even though it's our fourth time with him today you know we are still learning new things which happened over the last four weeks.* **Participant 2:** *Yeah, I like that he is repeating himself, repeating the things that he has taught us although we have had it before but then he will bring it back*

again and again, so we don't forget it. So, I was pretty impressed with the programme and the four weeks that we have had, and I loved eating the food **G3/W4.**

Sub-theme: Learning the different cooking techniques and developing skills

Participants would frequently acknowledge how good it was to be shown and explained cooking skills and techniques, so they could now make vegetables (that could be considered bland if cooked incorrectly) taste nice.

Yeah 9 out of 10 for me, just knowing how to cut and cook meats and certain vegetables decently and what type of cooking pots you got to put them in, whether its stir-fry or salad **G3/W1.**

Through making several different salad dressings they learnt the principles of making healthy dressings. This learning was about providing them with a cooking repertoire to bring together affordable vegetables which are available to them, to make enjoyable salads. They also learnt about making different healthy sauces with the aim to enhance the flavours of the vegetables they would have to work with. The commentary throughout the focus groups and the workshops confirmed that learning how to create flavours was significant to the participants concerning their learning.

My thing is the sauces and sorting what goes with what, so really enjoying the different sauces with the salads and things just to spice it up. **Participant 2:** *Yea English food is very plain* **G1/W3.**

Learning the many different cooking skills and techniques was considered very important regarding participants adopting the learning. It was highlighted within the later focus group conversations that they were adopting many of these techniques, and adapting these, with their new skills, to their cooking methods.

I have noticed during the three workshops that you become excellent at making the different dressings for the different foods and it's really neat. The Chef noticed it too and he says, "now we haven't got any dressing for this" then he sings out "that we need to make a dressing" Straight away it's done, so I know his workshops are good and he is very good. 1, 2, 3, 4 we have had 5 different dressings and the measurements are right too. **Participant 2***: Usually I taste it and if I feel like its missing something, then I will add that something and then that's yum.* **Participant 1:** *I think that's the standout part for me during the cooking lessons that you pick it up and you have got the measurements and then you chuck something else in it* **G3/W4.**

Being shown how to implement the techniques correctly, and developing skills, gave those who needed to build their self-confidence an opportunity to practice the new learning under guidance. The guidance came through as a very important part of the learning, as the participants liked to be shown, then they would implement and then they would reinforce the new learning throughout the programme.

> *I need to see it done, I'm that sort of person before I can look at a recipe and do it I like to get confidence with doing it with someone you know if you are going away from the normal stuff that you are doing, a different technique.* **Participant 2:** *Yea cutting the stuff, so it looks better* **G1/W3.**

Pre-programme, 15 of the participants (33%) cooked the family meals 3-4 days a week, for a further 33% it was 5-6 days, and for the final 33% they did this every day. Post-programme, 11 participants (73%) selected different answers from their pre-programme survey, moving up and down the scale of answers. With 2 of these participants (13%) they moved down the scale further than the 3 to 4 days, deciding they only cooked family meals 1-2 days a week. The important feature of these results is the confirmation that most of the participants (13) 87% were either the main cook or one of the main cooks for their family (Figure 2).

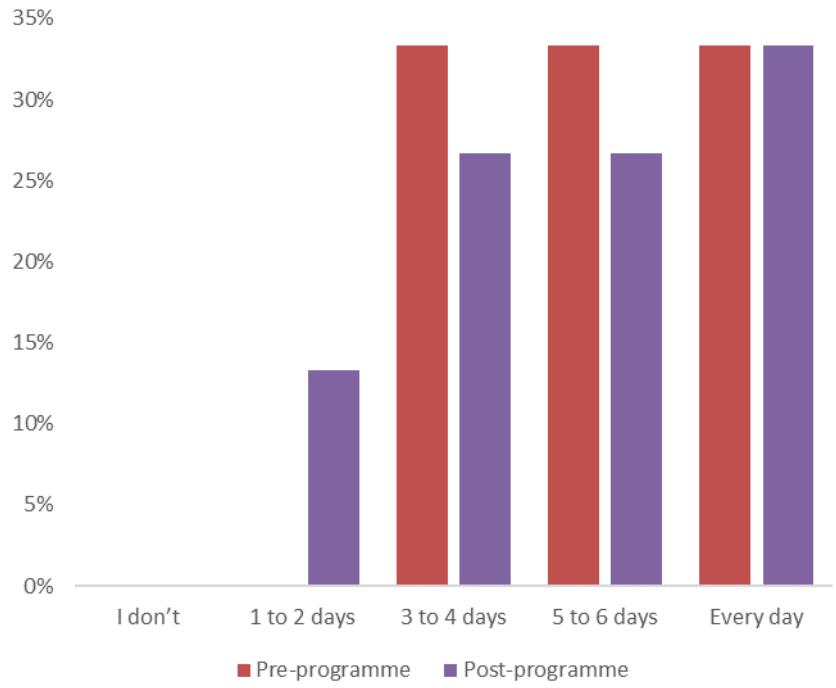

Figure 2. Graph for question 1. How many days of the week do you cook the family meal?

Sub-theme: Improved self-confidence

The participants developed more confidence in their cooking and moved out of their comfort zone as they began to utilise their new learning. When asked what they enjoyed about the programme, it was clearly expressed that it was the confidence they gained from the learning.

> *Learning how to prepare food, and not being afraid to try, to try new things.* **Participant 2:** *I'm the same about the preparing, even the slicing of the onions, different tricks to getting it all ready, prepped, and the sauces for me is a big one, doing my own sauces, rather than out of a tin or a can, a jar or packet, and flavours really enjoyed the flavours* **G1/W4.**

Now knowing what to do, and knowing what they are now doing is correct, all helped with them building their self-confidence. This improved self-confidence brought them a lot of satisfaction, as they found going back to their homes with their newly learnt knowledge and skills was liberating.

> *Yeah sort of makes you more confident in what you're doing, like I'm a house wife, and look what I made, yea it's like that you know… [All laugh]* **Participant:** *No need to go out for tea any more… [All laugh]* **G1/W3.**

This increase in confidence, knowledge and skills to increase flavour in their foods was also seen in the quantitative results as participants reported that they liked the food at home more after the programme (Figure 3).

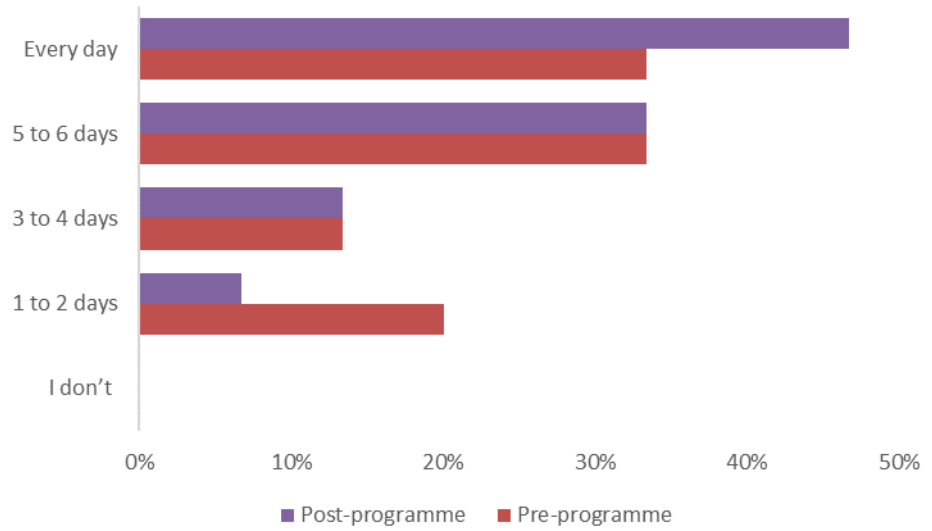

Figure 3. Graph for question 2. How many days of the week do you like the food at home?

4.1.3 Theme two: Cooking healthy with more vegetables at home

During the first workshops and focus groups, much of the discussion between participants was them explaining to each other, they are interested in learning about cooking healthily. Communicating how they are enthusiastic to put what they learn about cooking healthily with vegetables into their cooking at home. When participants first started the programme, the awareness of healthy eating for some participants was considered minimal. For other participants, they showed they had some healthy eating ideas for some time. It was also clear they all had different levels of healthy eating awareness and eating practices. However, it was found that they had all enrolled because they wanted to learn more about either healthy eating or cooking at home, or both.

> *I don't do a lot of stir-fries in my house, that's why I love this, yeah 80% for me. It's the healthy side of it, like I put a lot of oil and that sort of stuff in my food, so it was good to find the ways to reduce the fats and the sugars and that sort of stuff, it was brilliant* **G3/W1.**
>
> *Yeah it was yum and yet when you go home to do it, it's not as tasty but at least it's nice and healthy that was the main thing for me* **G3/W4.**

Discussions clearly showed that participants had been taking the knowledge and skills they had learnt and adapting these into their home recipes and cooking. They often referenced how they were making their meals and food ideas healthier, how they were bringing more vegetables into these meals and how they were applying their newly learnt knowledge and skills when presenting meals to the whānau. This was noticeably bringing them a lot of enjoyment and satisfaction.

> *I immediately tried something when I had enough fresh vegetables, I actually bought a couple to add up, took some photos that I've forwarded but I forgot to take a photo of the finished meal, but it was fantastic, my kids didn't believe that I'd done it* **G2/W2.**

One of the learning objectives that is explained to participants, is aiming to be eating mostly healthy family meals through cooking more affordable vegetables effectively, making meals healthy. It is explained how healthy eating can be achieved through using high amounts of affordable vegetables as much as possible and trying to minimise the use of highly processed foods as much as possible. The group learning environment was a good platform for supporting each other with this learning objective and they would have discussions about their failures and achievements from implementing the learning at home. They often revealed in the workshops and focus

groups, to each other, how happy it made them to take new healthy cooking discoveries home to the family, and how proud they were of their achievements.

> *You sort of feel like it's more enjoyable cooking, for me, I like to cook, but some days you don't like to cook, but now I am going to try this way, because this makes, makes you feel more excited about cooking* **G1/W3**.

Throughout both the workshops and the focus groups, the perceptions participants had about what types of foods are healthy continued to improve. The focus groups showed they considered the newly learnt knowledge about the different aspects of vegetables, their improved skill set, and increased feelings of confidence brought added value to healthy eating and cooking at home. For some participants, the programme's philosophy of empowering participants with learning skills and knowledge to cook and eat healthily with less processed food and more vegetables, effectively and affordably, was the catalyst for bringing healthy eating and healthy living into their homes.

> *Māoris were brought up with every household you go to has baked a nice fresh bread so get the butter happening the jam happening. So, as you grow up you've got all that in you already. So those changes are pretty hard as it's inbuilt in you. But when you see this cooking class it just really defines where you can make the change, along with healthy eating. Now he is telling me to walk around, exercise, so yeah now I have to make a change. I love it that he builds confidence in you to eat healthy and live healthy. Like wow, its different food cooking, so we are pretty pleased with learning this* **G3/W1.**

Towards the end of the programme, some participants explained how they had only learnt about the many different benefits from eating lots of vegetables from being on the programme. They explained how they now understood what they could achieve through cooking and eating more vegetables. This was in relation to the cost of their food, and for the health of the family, and how enjoyable it is serving nice, tasty, healthy food at home.

> *Um, the vegetable one, and knowing how to cook the vegetables and then putting it with your kai, like the mince and all of that and using the right herbs for the right dishes.* **Participant 2:** *For me it was just the way he cooks it, not in heaps of butter and just different ways of cooking it, just a better way of cooking, healthier way of cooking* ***Participant 3:*** *I am using a lot more vegetables in a couple of things. More vegetables but my partner he likes to have a lot of butter with his food. So yeah, he will have lots of healthy food and then ruin it with all the butter, so yes and no* **G3/W3.**

Significant to the learning was demonstrating different ways to use affordable vegetables, making them into healthy meals that will still taste nice for the kids. These techniques were shown to be adopted when cooking meals for the kids, and there were reported successes coming from participants.

> *For me it was the stuffing, I was so used to the same plain old simple stuffing, onions and thyme, but with this one I can disguise the stuffing with a lot of vegetables my family wouldn't even notice, and it tastes really good, and the salad, loved the salad* **G2/W1.**

Three weeks later, during the final focus group for **G2**, this participant was asked, "What changes have you seen at home?" The reply was:

> *Different uses for vegetables, like the stuffing, made the other night for dinner and the kids absolutely loved it* **G2/W4.**

This increase in the use of vegetables may be reflected in the proportion of participants who reported doing healthy cooking at home, which increased after taking part in the programme (Figure 4). Pre- programme 40% of the participants considered they cooked healthily at home "Sometimes" and 60% elected they did "Most of the time". Post programme cooking at home "Most of the time" lifted 13% to 73% and "All of the time" went up to 13%. These percentages are the representation of 8 participants who stayed the same with cooking healthily at home "most of the time" and 5 others who improved from only cooking healthily "sometimes".

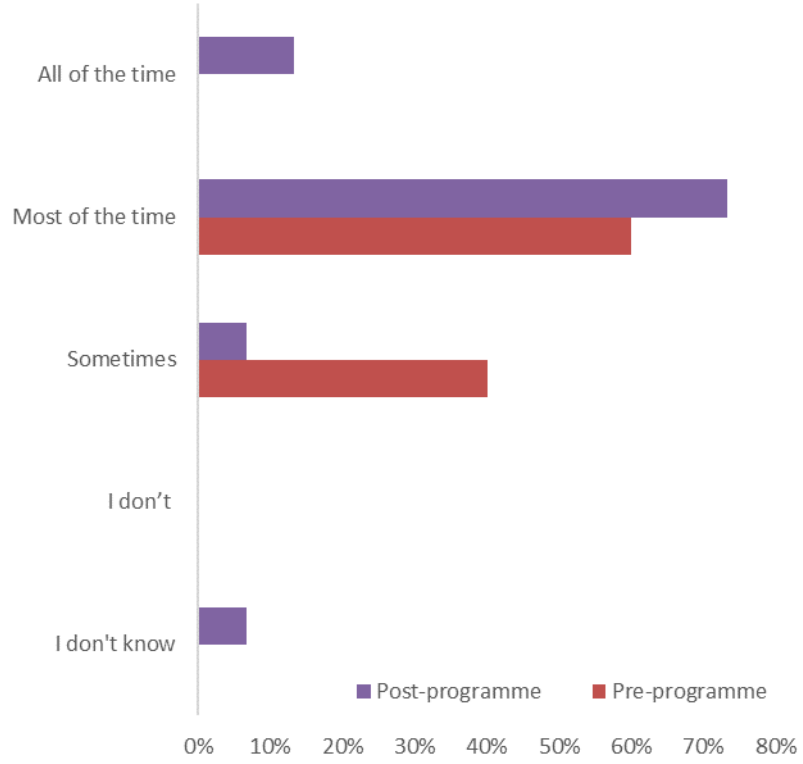

Figure 4. The Graph for question 10, How often do you think you do healthy cooking when cooking at home?

For a number of these participants, cooking healthily for the family moved further along the continuum, as they also brought the family at home with them on their healthy learning journey. With these new skills and knowledge being transferrable, some family members were encouraged to join in with the healthy cooking changes being made at home.

> *Oh yeah, I made the salad and got my daughter to make the dressing in a jar and then she puts it on her salad before she goes to school.* **Participant 2:** *Yeah, I got my son to make the dressing, so I got him involved in that.* **Participant 3:** *I had never made a dressing before* **G1/W3.**
>
> *I have one daughter that quite likes cooking so she's been really interested in what I've been doing* **G1/W3**.

From participants' conversations, it became apparent that the children and others in the family were benefiting from what their parents and caregivers had learnt on the programme.

> *My family are now learning to use heaps of vegetables, my family, now start cooking with lots of vegetables.* **Speaker: And they are enjoying that?** *Yes, they are, and we like it, more vegetables for my kids as well* **G2/W4.**

Sub-theme: Learning about frozen vegetables

The participants clarified with the chef, before it was explained on the programme, that they already knew in many situations frozen vegetables can be a more affordable option than the fresh vegetables on the shelves or in refrigeration. The cost of vegetables, learning how to cook affordable vegetables and making them taste nice were all considered to be very important to the participants. However, many of the participants confirmed that before they took part in these workshops, before learning about frozen vegetables, they did not often cook frozen vegetables at home. Furthermore, they expressed, from learning about vegetables that they had increased the purchasing and consumption of vegetables at home and this included frozen.

> *Yeah that was amazing for me as I didn't realise the nutrient value, of frozen and fresh. So, when he told us, it was good. Because, it's quite cheap to buy frozen vegetables, and you know you have them in the freezer.* **Speaker: It's good to have them on hand isn't it?** *Yeah add colour, I don't like peas but I'm finding with the different flavours I'm noticing I can't tell* **Speaker: So, are you using more frozen vegies?** *Yes, I have bought more. I always used to use them but when I used them I used to feel bad about it, thinking like I am lazy, but now am different I have another feeling* **G1/W3.**

Their learning covered the information that, depending on seasonality and the age of the vegetables in the shops, the more affordable option of frozen vegetables can sometimes be higher in nutrients, as they are snap frozen on the day of harvest. Surprisingly, most of the participants' perceptions were that frozen vegetables are not considered a healthy option.

> *It's good to know that about frozen vegetables, how they are so good, I used to feel so bad, bad mother*. **Participant 2:** *Yea me too, in fact better, for me I never bought frozen vegies because I thought they were bad, because they were coming out of a packet, but the frozen vegies are all snap frozen.* ***Participant 3:*** *I usually buy everything when it's on special and I think Count Down doing $2 bags for some of their frozen stuff it's cheaper* **G2/W4.**

During another conversation in the workshop one participant also commentated:

> *It's not just fresh vegetables, like you know you buy from the vegetable section; frozen vegies are just as good* **G2/W4.**

Many of them perceived the freezing process destroyed the nutrients and the flavour of the vegetables. Through learning many vegetables which are not frozen and are on the shelves, or even in the fridge, are slowly losing their nutrient content as they age, they were extremely surprised. Their commentary showed they now understood

that for some vegetables, over time such as a week, or two in the fridge but not frozen, a lot of the nutrient content can be lost, as they are no longer fresh.

> *Yeah, my husband doesn't like frozen veggies. But the chef explained that they come straight out of the garden and straight to the factory blanched and frozen, so they are actually better than veggies that you buy that have then been sitting for a couple of weeks in the fridge. I'll have no qualms about buying frozen because of what the chef explained to us. It's practically cooked as soon as it comes off the vine or out of the ground and then frozen. So yeah leading up to that, I would never buy frozen veggies because I didn't like them either but after he told us that, no qualms about frozen veggies now and for that particular reason. It's just something that none of us know, a* **G3/W3.**

Sub-theme: Cooking vegetables correctly

Their learning about frozen vegetables being fresh (as in frozen fresh), healthy and tasty, once you know how to cook them correctly, prompted some big changes in their home cooking as they started using more frozen vegetables.

> *That was our vegetables last night. They are not as good as the fresh ones, but it's amazing how you can put them into cooking and make them nice, way easier though. I must have used them last night we used frozen veggies, the corn, carrots, peas one and boiled them and once I boiled them and drained them a little bit and then I added 2 tablespoons of butter (laughter). Which was bad because I shouldn't have put the butter in but it's just so Yummy* **G3/W3.**

Most, if not all, of the participants, indicated they found out they did not know how to cook frozen vegetables correctly. Some commented that when frozen vegetables are not cooked correctly, they don't taste very nice. The correct cooking of vegetables was a significant part of their learning. The emphasis on cooking frozen vegetables correctly became considerable during the workshops, as the participants agreed with each other that they are more affordable, and they all wanted to know more about cooking them correctly and making them taste nice. They confirmed how they don't taste nice and this was another reason why they were not eating or purchasing them. They can be the affordable option and, as many of the participants frequently stated, to their surprise, now when they cook them correctly, they taste nice and they will start buying them more often.

> *Yeah in my house there are 6 adults, so these meals are fantastic. For 13 bucks to feed the whole lot is awesome, yup. I actually wasn't a big fan of mixed vegies in a lot of food, but since he has cooked it through some of those meals, um that shepherd's pie, well that is awesome and he added the kamokamo which made it even more tastier, yeah I think now that you can buy a big bag of mixed vegies you can use it, that cooks a lot rather than buying 1 carrot which costs a lot of money. It's fresh so yes, I think its cheap* **G3/W3**.

The blanching of different fresh vegetables was also part of the learning, and the discussion comments showed that some of the participants wanted to take more away from this than others. During workshops, several of the participants from all three groups had commented they wanted to learn more about the blanching of different vegetables. They considered learning this was going to be especially good for them when they have a large number of fresh vegetables, rather than them going to waste. This type of input from participants would provide direction for learning during the workshops. The method of blanching many different types of fresh vegetables was explained extensively, demonstrated, and then done by some of the participants. This also included the blanching, portioning and then the freezing of silver beet. Some participants explained they grew silver beet or would get large amounts given to them. There were a small number of participants from different groups who confirmed they did apply this learning (of blanching, portioning then freezing) at home, and found knowing how to do this correctly was, and would be, very beneficial.

> *We've covered blanching briefly today, so until today when I have been getting bulk of a vegetable, we have eaten as much as we can, and the rest goes to waste. Because I did not know what you can store or how you can do it I have got a bit more hope now with having got a basic understanding of the theory of blanching* **G1/W3.**

At the following workshop this participant had this to say about putting the blanching of vegetables into practise:

> *I did freeze some of my blanched vegetables.* **Speaker:** *So, did you spread freeze it out or put in a bag?* Participant: *I let it sit to make sure it's dry and cold, and then put it into bags, basically, then thawed it out I just put it into a chow mein* **Participant 2:** *And it was good.* Participant: *Yeah, and it doesn't take much, just thawing basically.* **Participant 3:** *And you didn't find it soggy.* Participant: *No that's what I used to fight before, when I didn't know how to blanch properly, so no, not soggy* **G1/W4.**

4.1.4 Theme three: Healthy cooking can be the affordable option

During the early workshops and focus groups, some participants discussed how they did not cook with a lot of vegetables often. In one situation, some of the participants went on to explain they would use a lot of processed foods, describing how they are nice to eat and easy to make and cheaper than the healthy foods. They made comments about this during the workshops, *"If you want to eat healthily like this, you need to learn about these foods, learn cooking and how to make cooking cheap. If you*

haven't learnt what we have here, it is hard to do that." In the workshops they would explain and talk to each other about why people buy cheap foods in the packets, *"because they don't know how to cook vegetables like this making them nice"*. One participant commented on how *"nobody has taught us this before, we should be taught this if they want us to eat healthy because it is expensive to eat healthy if you don't know how to do this"* and other participants agreed.

> *I am a healthy shopper, but my husband is not because he has no idea he just goes "oh look that's budget, let's get it "and then it has thousands of sugar calorie and things in it, and my babies are going to get rotten teeth, it's sad, but he buys fizzes because you can buy 5 for a dollar. You know one dollar a drink, you know that his purpose of buying those fizzes it's cheaper than milk and I go to him look at all the fizzes. You know they are just $1, so I have to bring him down to the next cooking class to teach him about this. He loves what I cook here it's healthy, when it's healthy food because he says wow, that's nice when I take him this food home. I say to him look I will bring you back something, so you can have a taste and then change his mind, you know so he comes to the cooking class I hope, yeah (laughter). Sometimes it is the ones that are at home you have to worry about, they just go and buy all these things, but you know why, because its budget prices* **G3/W3**.

Is cooking healthily an affordable option? This was often discussed during the cooking workshops. Participants would often talk about all the different ways healthy eating could be more affordable and the ways it was expensive.

> *Yeah, I agree with that good for the family* **Participant 2:** *Yes, that are budgeting* **Participant 1:** *Yeah for a Māori person that's the biggest thing, the budgeting and the shopping.* **Participant 3:** *I'm the same I don't budget, I just chuck everything in the trolley, yeah makes me think, I do actually think, but I do regret what I put in, especially when I see the bill it's just making myself aware to buy more vegetables. Yeah, its vegetables that make the meal* **G3/W3.**

As mentioned before, fundamental to the programme is to empower, and provide inspiration, to bring more vegetables into home cooking, while working within the limits of budgets. This is the reason behind having the group discussions about the cost of making every meal during the programme. The discussion included ways to make the recipe for the meal more affordable, the cost of using other vegetables that may be in season, cutting back on expensive protein, and substituting with more low-cost vegetables, when knowing how to make them tastier. The focus group discussions showed that participants responded well to this learning.

> *I've bought a lot more fruits and vegetables since doing this and it's eaten.* **Speaker:** *How is that going budget wise?* Participant: *Yep I've spent more I'd say buying the sauces, but they are like one off things so they last a long time.* **Speaker:** *So, you're using all the vegetables and you're not wasting anything?* Participant: *Yep using them all and a variety of different vegetables, whereas before it was sort of the same ones.* ***Speaker:*** *And what does the family think?* Participant: *My family are happy* **G1/W3.**

During the workshop discussions, the participants made it clear they were interested in ways of making home cooking more affordable. In the focus group discussions many of the participants, but surprisingly not all of them, had let it be known that the cost of foods was considered to be a big influence on what they were able to eat at home. Participants also discussed how they valued what they learnt about making meals at home more affordable, even the few participants who had admitted to not being overly concerned with costs when shopping for food. Often there was discussion with participants in the workshops, and between each other in the focus groups, how the learning has provided them with a far better understanding about the affordability of meals, including through using more frozen vegetables.

> *Yup, like he showed us today how much the mince costed it was $10. When he added the mixed vegetables it was $3 so for $13 we could feed five was it? That's 5 to start off with the mince and with the herbs & spices and when he put the mixed veggies in, it went to 8, so 8 grown-up's meals, it's amazing for $13 you would only get 1 meal* **G3/W3**.

Some participants even commented that knowing how to cook healthily with vegetables has helped them with using them more often and has made some meals more affordable. Furthermore, some mentioned that, through implementing their new strengths at home, they found there were more opportunities to make better food choices while staying within their budgets, and to convey their own healthy cooking ideas into whānau meals.

Sub theme: Learning about the more affordable meats

The participants found the discussions about making different meats part of the meal, and making meals more affordable and healthier, a very interesting topic, as in the previous data extract and the extract below. They found it interesting how you could cut down on a meat such as mince at about $ 10.00 to $15.00 a kg and when you cook it, into something like a curry or cottage pie, you can take out a third of the expensive meat protein and replace it with the equivalent amount of frozen vegetables at $ 2.50 to $3.50 a kg. With a large family, of say 8 to 10 members, cooking a kg of mince, or other meat

protein each day, this becomes a significant saving over even a short time. When they learnt this, it generated a lot of conversation about how the meal is healthier, still nice as you don't taste any difference, if not tasting better from what they have learnt, and you can save a massive amount of money.

> *If you buy an ordinary pastry pie it is $3 or $ 4 today for a little pie.* **Participant:** *Yeah $3 or 5 bucks that's for one person, so today we cooked for 8 people, was there 8 of us?* **Participant 2:** *Yup 9* **Participant:** *And there is heaps left over and so he is cooking affordable meals and lovely meals* **(G3/W3).**

All the low-cost meals the chef made on the programme were made from ingredients sourced at the local supermarket. When the meat was put on the heat to cook, the price of the meat cooking, and other meats, would then become part of the learning through discussion. This was an interesting discussion for participants as they could see the differences in the quality and price from the label of the meat purchased. The discussions were about low-cost shopping for mince and other meat products to save money, but without compromising too much on the quality of the meat products. They enjoyed learning about how to avoid paying for the fat in the meat when you still want to purchase meat at a lower cost. The learning covered things such as, when purchasing the low-cost mince, how they should try to purchase mince that is red and does not have a lot of white fat in it. This way you are not paying for so much fat and this can be better for heart health.

> *Absolutely, he also showed us the different minces* **Participant 2:** *Yeah, the best minces to buy.* **Participant 1:** *Yeah because you have the best mince, he says don't get that mince full of fat and you don't have to get the prime mince, because it's too dear, you just get the red one. So, we learnt today, that is three different kinds of minces and to look and stop getting ripped off.* **Participant 2:** *Because the beef mince that he brought today was $13. But if you buy that prime thing it's about $18, and that costs, no good for us. And anything whiter than the red is no good, it's full of fat. Prime mince is just better cuts of meat. Sometimes it's just fat, just minced up and then put in the mince.* **Participant 3:** *I have always just bought the cheapest mince.* **Participant 1:** *Yeah me too* **Participant 2:** *So, he was showing us how to shop diligently for the cheapest and the best mince* **Participant 1:** *Yes, that is cool* **(G3/W3)**

Some of the participants perception of the cost of cooking healthy meals altered after attending the programme, with fewer them reporting that they considered eating healthily was expensive or very expensive (Figure 5). Pre-and post-programme, most of the participants (8) stayed the same, 4 of them selecting that healthy cooking was expensive and 4 of them selected not expensive. 5 of the participants moved up the scale 1 from "expensive" to "not expensive" and the others selected "Not as expensive as I

thought once you know how to cook healthily at low cost" Post programme the majority (60%) of the participants believed that healthy cooking is not expensive and 33% "Not as expensive as I thought once you know how to cook healthily at low cost.

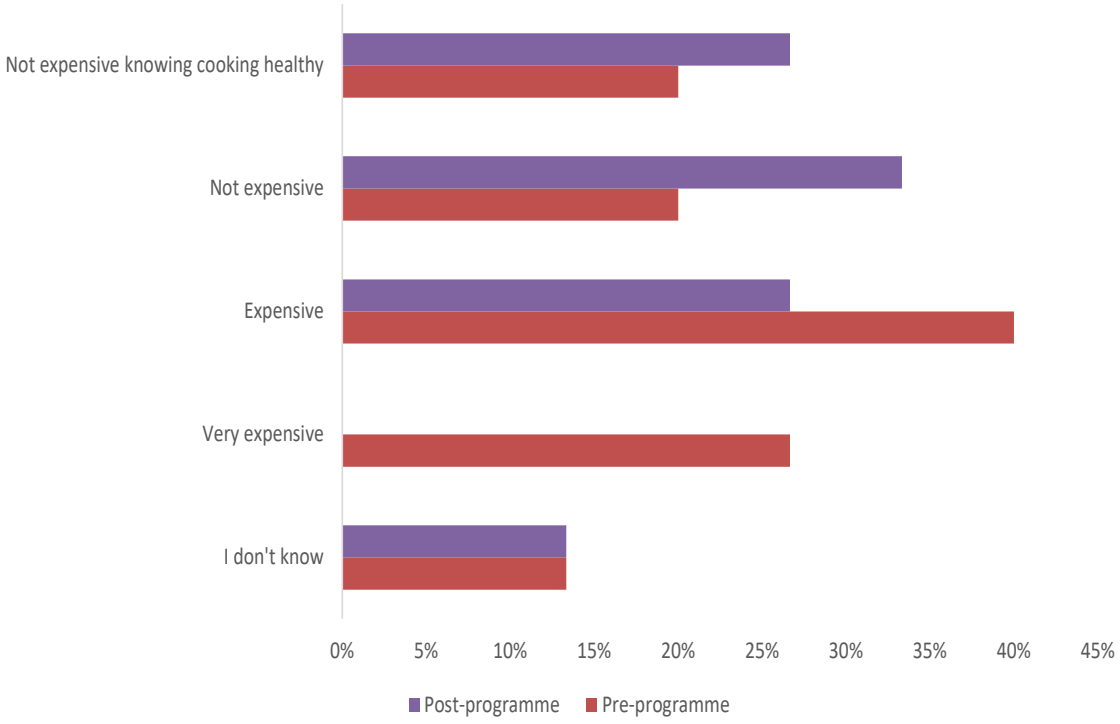

Figure 5. Graph for question 11. What do you think about the cost of cooking healthy meals at home?

Chapter 5: Discussion

Introduction

This chapter will discuss the overall findings in relation to the themes presented in the results and the literature review. Overall, the findings showed that participants were positively influenced as a result of taking part in the programme and they gained confidence with cooking healthy food and began cooking healthier meals at home, with more vegetables, and their families were enjoying these meals. The latter part of this chapter discusses the recommendations. These include the government actioning a comprehensive national healthy living strategic plan and possibilities for further research; this is followed by the conclusion and the study limitations.

The three main themes identified in the study:

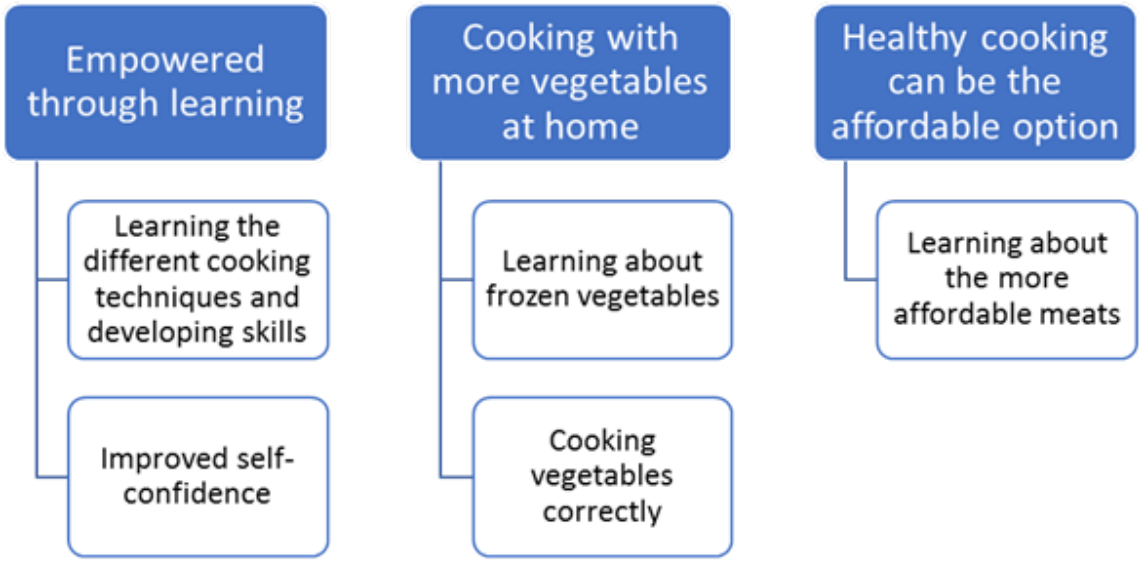

Figure 6. This is a duplicate of Figure 2 showing a visual representation of the themes with sub themes

5.1.1 Empowered through learning

The method used for delivering the learning in the workshops has been shown to be significant to the participants' engagement and learning. This attribute (method for the delivery) should not be undervalued during the development of this type of programme, as the method used for delivering the learning, is considered to be as

essential as the learning itself. These two fundamental aspects of the programme do require a form of coherence, when working towards empowerment. This coherence of the delivery and the learning worked together towards participants' building self-confidence to apply what they learnt when cooking meals at home. It was found to be empowering for cooking meals from scratch and using additional vegetables to whānau meals.

Supporting self-determination through providing a domain where autonomous motivation will be nurtured, and making this central to the delivery method for the learning, was considered paramount if participants were going to attain this learning, and become empowered to action. Deci and Ryan (2008) would argue that if the goal was the empowerment of the participants, conditions for nurturing autonomous motivation ultimately being at the forefront of the method of delivery would be the correct approach, for this type of programme. Deci and Ryan (2008) argue that within Self Determination Theory (SDT), in the concept of causality orientation, there are three important orientations that need to be considered, concerning the motivation of the participants. These are autonomous orientation, controlled orientation, and impersonal orientation.

There was considerable confirmation that the delivery method, working within the concept of enhancing the participants' autonomous orientation, had worked well for those participating. The participants responded well to the learning environment where autonomous motivation was nurtured through their participation, and the aim was to diminish the pressures that would sit within the context of controlled orientation.

> *I think this is really fantastic it's a new thing for us and it's a new beginning and something that is going to be ongoing. The chef is really good on how he presents his cooking class and as a group you know we are getting on good together.*

Nurturing participants' autonomous motivation involved providing them with autonomy supportive learning. This was achieved through taking on board their perspective, encouraging exploration or initiative, and supporting them with making reflective choices (Deci & Ryan, 2016). These reflective choices were often presented throughout workshops and within discussions. One of the prominent approaches used was by seeking clarification through questioning and conversations with each other and the chef. Participants would then meld answers, including from discussions generated from this, with developing their know-how and with their resourcefulness to complete

tasks in the workshops or at home. With the delivery method encouraging a participatory approach to learning, this provided opportunity for choice, engaging conversations for all, and further opportunity for learning from the chef and each other through the questions, answers and the conversations. The value in these group centred conversations and questions was shown to be high, as they also brought everyone together as a team, working toward the common goal of learning how to cook tasty, healthy meals through hands on learning. Within SDT, the attainment of relatedness would mean their inherent desire to feel effective when interacting with the programmes environment was being met (Deci & Ryan, 2016). With participants gaining feelings of relatedness with others concerning the activities, through their open group discussions, this would be internalised then integrated into their sense of self (Deci & Ryan, 2008). This relatedness between group members evolved into developing ideas together to achieve what became the aim for all, cooking healthy meals on the programme and at home.

Having the autonomous learning environment in workshops meant participants had autonomy over many of the decisions made. This was through their participatory discussions during the programme which were also part of developing the learning outcomes they wanted to achieve as individuals and as a group. During workshops, the chef would explain the theory about different health aspects and the relevant cooking techniques during the group conversations and questions. With the chef putting healthy cooking techniques into practice in a complete form, participants would implement the new techniques they observed, and ask questions while making the meal together in the team learning environment. The competence gained, through completing the activities under their own volition (e.g. the reflective choices made from their observations, discussions and questioning, and not being given excessive directions) and with their participation in decisions, this is all considered to nurture intrinsic motivation Deci and Ryan (2008). Furthermore, becoming autonomously motivated through the autonomy supportive learning, Deci and Ryan (2008) would argue there will also be an ongoing position of satisfaction, for each individual, with what they learnt. Deci and Ryan (2008) argue the outcome that is attained for the individual through nurturing their intrinsic motivation when learning, will be effective performance with heuristic types of actions, providing greater persistence towards healthy change, and maintaining this healthy behaviour change long term.

Relative to SDT, learning through participatory activities would have enhanced the participants' autonomy and when successfully achieving these activities, this would have increased their competence. Deci and Ryan (2008) would argue this is because the participants' autonomous motivation would be internalised and integrated into their sense of self when they identified with the value gained from the activity. This would be through the experience of being self-governing and freely choosing, through the reflective process, the application for the action. The value of autonomy and relatedness gained through a participatory approach, shown through everyone working together as a team towards a common goal, while developing competence through learning how to cook tasty, healthy meals for their families through hands-on learning, should not be understated. These three basic psychological needs (relatedness, autonomy and competence), that were met for participants during learning, are central within SDT (Deci & Ryan, 2008). Deci and Ryan (2008) argue that these three needs being met, or not, is a predictor of outcomes such as motivation, behaviour, affect, and well-being.

Central to the participants' empowerment with cooking the newly learnt meals at home, using the information and skills and techniques they learnt on the programme, was that the essential aspects of the learning were delivered in a form that was complete. This meant relative information about the specific topic was provided and many of these relative aspects became repetitive through the programme. Kirschner, Sweller, and Clark (2006), through researching minimal guidance during instruction learning, argue that when learners are provided novel information, either in a complete form or in a partial form, they must be able to construct a mental representation of this information. The more complete form will have the result of the learner attaining a more accurate representation of the information, and acquiring this will be easier for them. Kirschner et al. (2006) argue that controlled experiments have almost uniformly indicated that learners should be explicitly shown what to do and how to do it when dealing with novel information. The results showed participants agreed with the way the learning was repetitive, and they enjoyed some learning being brought back into another workshop through the preparation of another meal. They felt this helped them retain what they were learning as they felt there was a lot to take from the programme.

> *I like that he is repeating himself, repeating the things that he has taught us although we have had it before but then he will bring it back again and again, so we don't forget it.*

According to Karni (1996) a training experience that has spaced out repetition when developing motor processing, will modify and improve the functional representations for meeting the demands of this new experience. With many participants remarking how they enjoyed the repetitive learning, this may be an indication they found the learning enjoyable but challenging. This may also indicate the learning was found interesting, as the results showed they did not reject this learning being brought back into the following workshops.

Learning cooking techniques and developing skills

The techniques demonstrated, then put into practise during workshops, increased the participants' skills and confidence, and participants found they enjoyed doing this and creating the new flavours. Many of them acknowledged how they were attending the programme to learn these cooking techniques and to develop new skills for making affordable, healthier meals at home. Lanumata et al. (2008) found, with a study into food security among those on a low income, Māori and Pacific people, that they also acknowledge having a lack of skills and information in the areas of food, nutrition, cooking, health and food budgeting. Participants from the cooking programme research had reiterated having these same inadequacies in their knowledge, and this was affecting their understanding for cooking healthily and utilising unfamiliar foods in meals. Short (2003), through a study into domestic cookery, found that cooking skills are a complex set of principles that consist of mechanical, perceptual, conceptual, academic and planning skills, and these are considered person-centred. Participants on Lanumata et al. (2008) study, and the current study, recommended that healthy food education programmes need to be available to address this lack of knowledge and skill on their part. Acknowledging these recommendations through the perspective of the Ottawa Charter for Health Promotion (World Health Organization, 1986), these calls for action should not be ignored, as this is considered an opportunity to overcome any lack of participation among these stakeholders for achieving their own good health. Through a World Health Organization (1986) perspective, this is a participatory call for action from this sector of a population (demographic), for the development of personal skills and provision of education and information for health, increasing their ability to take control of their own health.

The cooking programme involved knife skills (cutting and portioning meat and vegetables) cooking techniques (cooking vegetables, making sauces and salads with

dressings) and healthy cooking and eating information. During the first workshop participants explained how they were lacking in the cooking techniques, skills and information that could be considered essential, for cooking a range of healthy foods, like they learnt on the programme. After their first workshop, various participants started reporting using their new learning and recipes at home, and how this was being accepted by the whānau, including the kids. They were also adapting home recipes, often confirming how they were now making their meals healthier, bringing more vegetables into these meals and creating new flavours. Bringing more vegetables into meals, through cooking from scratch, and using the healthy cooking knowledge and skills and techniques learnt, presumably means many of the ultra-processed foods were being replaced by these vegetables, as this was fundamental to what they were learning. This suggests their learning was addressing the assertion by Ritzer (1983), where the understanding of cooking meals at home from scratch is being systematically replaced by pre-prepared highly industrialised convenience foods.

Participants considered implementing their healthy cooking at home was achieved through learning how to cut meats and vegetables decently, how to cook them correctly and learning the type of cooking pots and bowls to use for the ingredients, whether they were vegetables, meats, stir-fry, or salads. Outcomes from this research are consistent with Dunn et al., (2014) findings from Cook Smart Eat Smart, a programme that significantly improved participants' perceived cooking ability. Cook Smart Eat Smart was a programme with similar learning objectives that also had a focus on the limited use of highly processed foods. Both programmes had a significant focus on learning about preparing and cooking healthy foods, through using simple vegetables and other ingredients. Both these interventions also had in common, as Thomas (2000) would recommend for improved outcomes, concern for the participants' wider social context, as both groups were from lower socioeconomic communities. Procedures going some way on both programmes that addressed this, were aiming to improve food cost through providing tips and techniques for shopping and cooking healthy foods. Participants on both studies were learning this knowledge while working within the current constraints of their budget, therefore learning how to make their food budget stretch, and cook healthy meals (Dunn et al., 2014).

Improved self-confidence

Participants considered that learning different techniques and developing cooking skills, and their understanding about certain foods, would provide them with the confidence to cook these foods. The study by Warmin et al., (2012) into Cooking with a Chef (CWC), a programme aiming to increase self-efficacious behaviours related to cooking techniques, knowledge, and behaviours, was found to increase self-efficacy regarding the cooking and preparation of healthy food such as fruits and vegetables. The CWC intervention considered that if participants were taught how to perform certain positive healthy eating behaviours, then self-confidence in their ability to carry out those actions would also improve (Warmin et al., 2012). Comparable to CWC the cooking programme also aimed to increase confidence with cooking, while working to foster the development of self-efficacy among the participants, with the intent of also encouraging the adoption of the healthy behaviours learnt when cooking. With both CWC and the cooking programme it was found that participants had increased their confidence when cooking. Reiterated in this participant's statement where improved self-confidence was achieved, this is thought to be significant when considering putting into practise what is learnt. "*Yeah sort of makes you more confident in what you're doing, like I'm a housewife, and look what I made, yea it's like that you know."*

Bandura (1977) would argue the self-efficacy (confidence and belief) participants gained for themselves, concerning the healthy behaviours, would be an important characteristic if they were to consider adopting these healthy behaviours. Bandura (1977) states an individual will fear, and tend to avoid, an activity he or she perceives to exceed his/her ability, as the individual will consider such an activity threatening. Conversely, once an individual has judged him/herself as capable of handling a formerly intimidating situation, he/she will become involved and behave with assurance (Bandura, 1977). Participants found "*learning how to prepare food, and not being afraid to try, to try new things"* was very beneficial. By building their self-confidence, participants began to feel confident to try new ways of cooking, and new ingredients to cook, this included at home with their whanau.

5.1.2 Cooking with more vegetables at home

Through analysis of the study findings, the researcher created the following model to demonstrate possible influences associated with a lack of eating and cooking vegetables among the participants

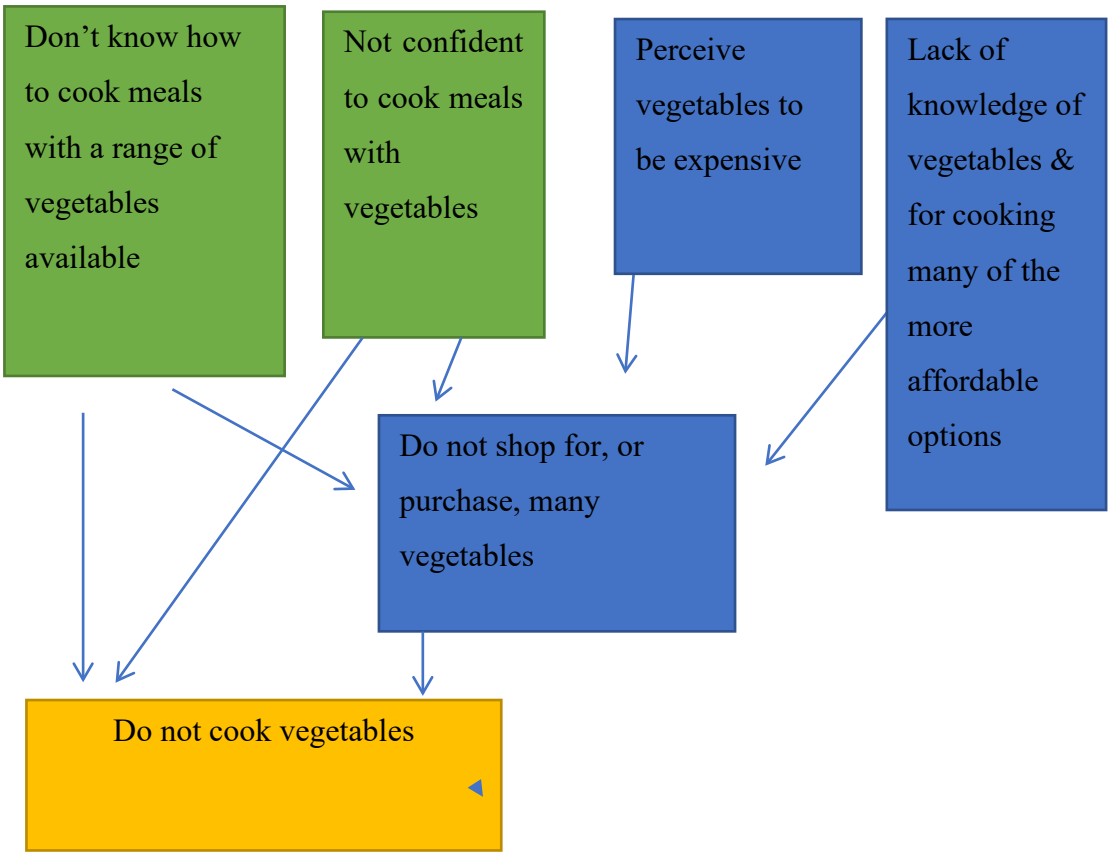

Figure 7. Visual representation of the individual in the position of not having the know-how, skills and confidence to cook a range of the affordable vegetables available when shopping

After the first workshop, participants began to acknowledge that they were now using more vegetables when cooking at home, and this was making the meals for their whānau (family) healthy. When they started the programme, the range of knowledge and skill in regard to healthy eating, and cooking vegetables, alternated at different levels for each of the participants. Cooking healthy foods at home for consumers is considered a problem, and Jaffe and Gertler (2006) argue this is because many consumers don't have the know-how or the skills it takes to cook a healthy meal from scratch. Instead, these consumers are opting for meals consisting mostly of ultra-

processed foods (Jaffe & Gertler, 2006). Once participants started to take home what they were learning, they began expressing that they had now learnt to cook vegetables correctly and they were making them taste nice. With 40% of the participants before the programme stating they only cooked healthily at home "sometimes" and most of the participants (87%) being either the main cook or one of the main cooks for their whānau this would have had an impact on the foods consumed at home. Participants cooking with more vegetables is a significant finding, as Rolls et al. (2004) argue increasing fruit and vegetable intake alone has shown to play an important role in weight management.

Unlike many of the minimal and non-processed foods, most of the ultra-processed foods are typically sold as ready-to-heat or ready-to-eat (Monteiro et al., 2011). This means they can be cooked or prepared with very little knowledge, skill and effort. They can be produced to have a consistent quantity, flavour and cost, and are perceived as having no attached waste product. They can also have a long or very long shelf-life, often because they are relatively devoid of perishable nutrients, or are even practically imperishable, in contrast to fresh foods (Monteiro et al., 2011). The consumer may also be informed, through marketing, or they may know from their experience, how the final product will be when served, and how it will taste. In contrast to this, cooking from scratch, with many unprocessed or minimally processed foods, a successful outcome cannot be guaranteed. For participants, the ultra-processed foods were seen as affordable, convenient and nice to eat, and they may have considered before the programme, these points outweighed their knowledge that these foods may not have been healthy as the non, or minimal, processed foods. The convenience and the associated rapidity of preparation of these ultra-processed foods favours patterns of consumption that are known to harm mechanisms regulating the bodies energy balance, and this is known to lead towards excess when eating and obesity (Monteiro et al., 2011).

Before participants had developed the skills and the confidence to cook many of the vegetables from scratch, which they learnt about on the programme, they had concerns. As they may not have learnt to cook different types of whole foods confidently from family members, their schooling or any other learning resource, or teach themselves how to cook and prepare vegetables from books and television shows, they lacked the confidence to try without guidance. They did want to learn about the different ingredients available and cooking vegetables and trying new things when cooking. However, they wanted to see it done first when trying these new things.

I need to see it done, I'm that sort of person before I can look at a recipe and do it I like to get confidence with doing it with someone you know if you are going away from the normal stuff that you are doing, a different technique.

Engler-Stringer (2010) found, in a study into the cooking practises of low income women, that they also wanted to try and cook other ethnic foods, vegetables and ingredients they saw in the stores, but they explained that they were afraid because they did not know how to prepare them. They were also concerned that if they did not cook them correctly these foods would then go to waste. Due to the participants' financial constraints, they also may not have been willing to experiment with many of the different better-priced vegetables, as failure to make these vegetables taste nice could also amount to waste. These could be the different vegetables available that were competitively priced, (that they were not confident to cook or make salads with) at the specific time of their shopping. With those living in lower socioeconomic communities having no contingency in a budget, failure to please others with these foods, then they were not eaten, could amount to a significant loss that is in no way affordable.

Before the programme, participants may have chosen to prepare many of the lower cost ultra-processed foods as the risk of the family not accepting the food as tasty, could be reduced considerably, meaning this food would pose less opportunity for waste. Short (2006, p. Vii) explains the reality of this situation by stating that "After all, if a two-year-old doesn't like what you've offered, they spit it straight back at you". Participants discussed that, before their learning, they were not cooking with many of the different vegetables available, explaining that they would use a lot of processed foods, describing that they are nice to eat, and easy to make and cheaper than the healthy foods. These processed foods are perceived to be at the lower end of food prices and they are more favoured by low-income consumers than the less energy-dense foods that are higher in nutrients (Drewnowski & Specter, 2004). Being drawn to the cheaper ultra-processed foods due to them seeming more affordable could be the reality for participants before the learning. This type of purchase may have also been due to the reasons explained by Jaffe and Gertler (2006), that these foods mostly require only a minimal amount of knowledge and skill to prepare for consumption.

Vidgen and Gallegos (2011) found that foods fill multiple needs for the individual, but when these needs come into conflict it can be difficult to maintain a quality diet. This is relevant, because these needs may inform what they choose to eat. Multiple needs could include the affordability, nutrient value, appearance and palatability of meals. These may be different for everyone; nevertheless, presumably

most people want their need for food palatability to meet their expectations, as participants often indicated the flavour and taste of foods are important to them. Lang and Caraher (2001) would argue that a lack of skill and knowledge has led to many consumers, in these times, not having the necessary knowledge for making discerning decisions about some foods. This includes aspects of many types of raw food products available to them. They state even though a lack of cooking skills may be a contributor to healthy food insufficiency, by preventing people fully participating in the healthy food culture, they argue the main course of this insufficiency is financial, not the absence of skills.

Through my experience as a chef for twenty-five years, and with providing a healthy cooking programme for lower socioeconomic communities for ten of those years, I would argue, that a relatively good amount of know-how and skill is required to correctly cook or prepare salads from scratch with the more affordable vegetables (including frozen) that could be available on any random shopping day. This includes having some knowledge about some of the many different and more affordable vegetables available, including their cost according to season and supply. The participants explained and talk to each other about why people buy the cheap foods and fizzy drinks. They commented, "*If you want to eat healthy like this you need to learn about these foods, learn cooking and how to make cooking cheap*. *If you haven't learnt what we have here, it is hard to know how to cook them, so they are nice."* Through the participants' gaining cooking knowledge and skills, they were able to cook the raw food (vegetable) products to a point where they became acceptable with the family. They could present meals at a reasonable standard of taste and presentation that should meet the needs of most people. However, before learning in the programme, not having good cooking knowledge for vegetables, and a poor repertoire for vegetable-based recipes, was the reality for the majority of the participants. Participants often explained, "*knowing how to cook the vegetables and then putting it with your kai, like the mince and all of that and using the right herbs for the right dishes"* was important when cooking vegetables.

Luiten et al. (2016) study into the food prices in New Zealand supermarkets concluded that the lack of significant price differences between the healthier foods (less processed) and the non-healthy (ultra-processed) foods could mean that time-poor consumers may consider ultra-processed foods better value for their money. Before the programme, participants may have perceived the ultra-processed foods better value for

money, and they may have felt the convenience of these foods was good for saving time. However, it was shown that a significant obstacle for them was also not having the know-how and skills to prepare and cook many of the vegetables that may have been considered a large part of the less processed foods in the study of Luiten et al. (2016). Furthermore, another obstacle for some participants may have been planning different meals around the lower costing vegetables they could cook confidently. When the vegetables they can cook fluctuate to a price that puts them out of reach in relation to their budgets, this could be significant regarding the purchase. With the vegetables in their whole form, the prices can fluctuate as they are dependent on a suite of complex and wide-ranging variables, from their production to their point of sale. When planning meals within the constraints of their budgets, they would need to take these price fluctuations into account, and shop within the limitations of their cooking knowledge and budgets.

Lanumata et al. (2008) consider the ability to purchase the alternative affordable vegetables that are available when shopping, to be significant for the food security of those living on a low income. Determining the quality of lower-priced foods, such as minimally and non-processed vegetables, and the skills needed to make these basic foods into a sustainable quality diet, would be significant abilities when considering food security. Preparing and cooking alternative, more affordable vegetables was one of the learning outcomes for the participants. One option they learnt about was making frozen vegetables a basic staple when many of the whole vegetables are priced too high or are out of season. For many of the participants, before they learnt about frozen vegetables, this was not an option often used. Participants explained, before they learnt about the nutrient value and how to cook frozen vegetables correctly, that they did not use them often, or not at all, "*for me, I never bought frozen veggies"*. Once the participants developed a cooking repertoire with more diversity for cooking vegetables, this empowered them to adapt their meals to cook more vegetables. This repertoire could also mean that they are planning cooking around the vegetables available at the more affordable prices at the time of shopping. As Luiten et al. (2016) found there are many combinations of affordable vegetables in the minimally frozen and non-processed foods range available in New Zealand supermarkets. However, cooking these vegetable combinations, so that they meet the expectations of others, may not be achievable for some individuals.

Before the programme, those participants who did not utilise many, or a lot of, the different vegetables available, they may have also been locked into a situation of not learning how to shop for, and cook, the more affordable vegetables available. Presumably, the individual who is very rarely preparing and cooking the healthy staple foods, such as vegetables, may also be missing out in the practice that is useful to shop for these foods at the most affordable prices. As many fruits and vegetables often have fluctuations in price, those who are not cooking with many vegetables presumably would not be shopping for them and they would not be continually learning about affordable vegetable purchasing, knowledge that can be gained through practise. If the participant did not have the appropriate knowledge or practise, to support them for economically shopping for vegetables, they could gain or maintain the perception that vegetables are expensive. If this corresponds to not purchasing these vegetables, they will not be learning from a practice of cooking and preparing different affordable vegetables, as they will not be cooking a significant quantity or range of them often.

Learning about vegetables including frozen

Participants confirmed that, when preparing or cooking minimally (frozen) or non-processed (whole) vegetables without having the know-how, these vegetables could be difficult to cook, or prepare in salads, correctly, so that flavours were optimised instead of destroyed. This is where there is the retaining, or improvement to, flavours, texture, colour and many nutrients. There are many ways of overcooking and spoiling the flavour, texture, colour and nutrients of vegetables. Some vegetables cooked incorrectly will even have their natural flavours tainted, and inadequately cooking vegetables can make them tasteless or even unpalatable for many people. Inadequate cooking of vegetables can happen when some types of vegetables are placed in cold water, then brought to the boil, or when they are over boiled, over steamed or even sitting warm for too long, destroying the texture, colours, flavours and many nutrients.

The participants would often comment, when they ate the correctly cooked vegetables, or prepared raw vegetables dressed in a salad, or with a sauce, that they enjoyed them greatly. This learning showed them how to not overcook and how to correctly cook vegetables. The methods learnt would enhance the natural flavours, textures, colours and minimise nutrient loss, and this was found to be far more enjoyable than the soft, tasteless, overcooked vegetables they felt they knew too well.

Furthermore, through making different salad dressings, or sauces, to go with the raw or correctly cooked vegetables, they brought some tasty new flavours to their meals.

> *it's amazing how you can put them into cooking and make them nice, way easier though. I must have used them last night we used frozen veggies*

Participants applied many of the methods learnt for cooking vegetables when making meals at home. This was shown to be a positive result with their whānau as well.

> *I immediately tried something when I had enough fresh vegetables; I actually bought a couple to add up [. . .] it was fantastic, my kids didn't believe that I'd done it.*

These results are significant for the children of the parents and caregivers, as Ramsay et al. (2017) found overall children have a better quality of diet as well as better subscales, such as less empty calories, when primary caregivers can support them with having a greater consumption of a variety of fruit and vegetables, by offering them more frequently.

5.1.3 Healthy cooking can be an affordable option

Post cooking programme 28% found healthy cooking was expensive. However, 60% of the participants found healthy cooking is not expensive. Within this 60% it was found that 33% believed, "*Not as expensive as I thought once you know how to cook healthily at low cost"*. The remaining12% of the cohort, could not say why they considered healthy cooking was expensive. An essential part of the learning attained by participants provided them with a better understanding of the more affordable characteristics when cooking healthy meals. They felt empowered with their new method to prepare and cook the quality, but more affordable, vegetables available, including using frozen vegetables. Having better skills and know-how to cook many of the lower cost vegetables correctly and healthily was considered important to participants. As they considered these vegetable-based meals a style of healthy cooking that would be enjoyed by the family. Through implementing these newly learnt strengths at home, it was also considered there were more opportunities now to make better food choices when cooking healthy food on a minimal budget. They also confirmed that they have transitioned the learning to implement their own affordable healthy cooking ideas into the family meals.

5.1.4 Conclusion

Those living in lower socioeconomic communities may be purchasing many ultra-processed foods, because they don't think they have the knowledge, skills and tacit skills, and ultimately the confidence, to cook different vegetables (or prepare salads) correctly so they can be enjoyed by family or whānau. This includes many of the varieties of more affordable vegetables available (including frozen vegetables) while still maximising their quality and flavours, making them taste nice. Due to this deficit of knowledge, skills and repertoire for purchasing and cooking the more affordable vegetables, they may be defaulting to the low cost ultra-processed foods, as they perceive these as nice and as affordable foods that they may think are a closer fit to the capacity of their cooking skills, knowledge and budget. Without an intervention, which includes learning to cook different vegetables so that they taste good and are within their budgets, these individuals may continue with the behaviour of cooking the foods they know and can afford. This may mean they are continuing to purchase many of the ultra-processed foods available for family or whānau meals and these foods do not have the same health benefits of the non and minimally processed foods.

When shopping, due to lacking confidence, they may perceive the risk of experimenting with different, more affordable vegetables available, and spoiling them when cooking, so that they will not be eaten, as an extremely high risk. When they consider purchasing the minimally processed foods and vegetables that need to be cooked from scratch, they have to weigh that against their low financial output, and their possible failure to prepare a meal that meets the family's expectations. Before attending the programme, participants perceived themselves as not having the adequate cooking knowledge, skills and, ultimately, the confidence to cook or prepare many of the different types of lower priced vegetables for family meals. The consequence of others in communities with the same difficulties not attaining the participants achieved skills and knowledge, is that their confidence to cook healthy food high in vegetables to a satisfactory standard may be limited. This may be due to a lack of transformational inputs available to them needed for change. They may be confined to the inequitable circumstances of a low income and a lack of resources. These include education and the benefits of different experiences, which may be available if they had an income that was more expendable, so they could experiment more with foods and learn, more about healthy living and healthy food.

5.1.5 Recommendations

Decreasing the rising prevalence of obesity, with its declining health outcomes, and further increases of inequity will require the Government to address this obesity epidemic through the development of an inclusive and comprehensive national strategic plan. This strategy will also need to have a considerable focus on tackling the social inequalities driving the burden of obesity for significant sections of the population. The World Health Organization (1986) recommended that channels should be opened between the health sector and components of the broader political, economic, and physical environment, as this is required for addressing the true drivers of health and equality. The World Health Organization (2016) recommended that more focus needs to be placed on collaboration across sectors, with attention applied to research and evidence-informed practice. Action and partnerships across the spectrum of all the relevant Government sectors (with a significant focus being working with the social, health and education sectors) is also essential in developing the strategic plan. Policy makers, planners and economic developers need to work together, bringing the focus towards sustainable outcomes and equity. Health, environmental standards and social equity need to be paramount in Government policy addressing the availability, quantity, cost, marketing and appeal of all foods from global and national businesses. This includes revising policy and legislation bringing significant restrictions to the marketing and the sale of ultra-processed foods shown to be implicit in the obesity epidemic.

As part of a national health obesity strategy, led by firm Government leadership, there needs to be more of a commitment to effective population health policy and the development of better effective related health systems. Strategic planning and action needs to be alongside the reorientation of health services, through meaningful collaboration between individuals, communities, health providers, health professionals, institutes, iwi and the governments sectors, all constantly working together, aiming to achieve health and social equity for all (World Health Organization, 1986). It is essential to the principles and the success of this planning and policy that the focus is on the total needs of the individual as a whole person, driven through the embracement and expansion of mandates that are sensitive and respectful to the cultural needs of others, (World Health Organization, 1986) and this includes the Treaty of Waitangi.

The current study argues that meaningful participation when working with communities, supported with other strategic planning, can make a considerable difference in the fight against obesity. This means communication channels need to be

meaningful and opened, so people can work together with the health sector, in making decisions and setting priorities, and be involved in planning their future health. The national strategic plan needs community-based approaches that are Ottawa Charter values based, as HEHA was between 2004 and 2012. These values, for community-based approaches, are still relevant and should not be forgotten, as this Government's mix of system and population health improvement measures alone will not be enough to turn the tide of the obesity epidemic. The Ottawa Charter's base values of humanism and solidarity need to be upheld once again and the dominant social consensus during the third decade of the 21st century needs to away from the path of individualism and move back to a community based society O'Neill (2012).

The Government also needs develop fortitude to increase the consumption of more fruit and vegetables, as this will reduce the risk and burden of obesity and the associated non-communicable diseases. This action needs to be part of the strategic plan, working with those with the highest needs, involving them through their participation, empowering them with learning.

Further research into the concept of healthy cooking programmes, as a tool for health literacy empowerment, needs to be considered within the recommended national strategic planning for healthy living. At the macro level, further research needs to explore how these types of healthy cooking programmes can be better implemented in communities with the highest needs, and in the education sector as a whole, as an innovative upstream health and wellness approach. At the micro level, further research is needed to further investigate some of the study's findings. When applying Luiten et al. (2016) theory to the individuals living in lower socioeconomic situations, the reasons for purchasing these foods may be more complex than just the convenience of purchasing these foods because of being time-poor. If food knowledge and cooking skills are limited, they may not have the ability to cook many of the minimally processed and non-processed foods. With a specific focus on cooking meals with vegetables within the minimally and non-processed food groups, there are several variables regarding those living on a low income that need to be explored further. Can regularly cooking vegetable-based meals, improve the knowledge and skills needed to purchase the better-quality lower cost vegetables regularly for the family meals. Furthermore, with regularly cooking these vegetable-based meals does this extend the individuals cooking repertoire to cook the more affordable vegetables available on any random shopping day. These variables could be affecting families, particularly those

living in lower socioeconomic circumstances, preventing them from making vegetables a significant part of a healthy diet for themselves and their families. If an individual's know-how and skills for cooking vegetables were limited, this may prohibit the individual from cooking many of the minimally (frozen) and non-processed vegetables. As the price of vegetables can fluctuate significantly, this could be preventing the cooking of the different vegetables that could be priced as the most affordable vegetables available at the time of shopping. Finally, what are the long-term changes with the use of vegetables for the family meals, when the family living on a low-income have developed a better healthy cooking capacity and can cook a wider repertoire of healthier foods?

5.1.6 Limitations

Knowledge, and the shaping of it, comes from the background of social interaction and different experiences of life, such as culture, class, gender, and these all influence research and will always affect substantive knowledge (Wilmsen et al., 2008). Guba and Lincoln (1982) argue research can never be completely objective, as the procedures to obtain outcomes can be a product of a complex range of variables and causative factors that are interacting with each other and there is always the premise of influence with the actors involved and the actions they take. Giddings and Grant (2006) argued these variables need to be acknowledged in research and taken into consideration when choosing the theoretical stance within the methodology, as these variables are reflected within the outcomes. These variables may include the subjective ontological and epistemological positions of those determining the phenomenon for research, their subjective decision process selecting the phenomenon and subjective actions they are taking during the inquiry and analysis.

In this research, a variable open for contention, and which was managed where possible, through elimination, isolation and minimisation, is that the primary researcher developed and delivered the cooking programme. This may be perceived as a possible power imbalance and position of influence that brings the risk of bias. The primary researcher was isolated from the position of influence where participants might feel pressure from the primary researchers' presence. Only the research assistants interacted with participants during the enrolment and consent process, explaining the information sheet, providing any assistance, completing the survey and facilitating the focus group discussions. Guba and Lincoln (1982) argued to acknowledge that in qualitative

research, just as the inquirer can't help influencing the participant's behaviour, the participant's behaviour can't be stopped from influencing the inquirer's behaviour, because it would be impossible for one to abandon their humanness in the name of objective inquiry. The separation of primary researcher from research participants during these research processes was for the protection of the participants and to minimise any risk of an imbalance of power, influence and bias. The primary researcher only interacted with the participants when teaching the cooking workshops and did not know who the research participants were in the cooking group, or in the data collection phases of the project (surveys and focus groups).

The impact from the data on the future of the cooking programme was a concern of AUT Ethics Committee and they considered this needed to be acknowledged. Participants were informed in the information sheet that the data from this project might impact the future of these classes. The number of participants who took part in both of the surveys was considered low, at 15 participants in regard to the quantitative results. Due to the participation number of 15, the quantitative results may not be considered statistically significant. Results from some of the survey questions have been presented as graphs with commentary, supporting the qualitative results, and all these results with commentary have been placed in the appendix.

5.1.7 Concluding thoughts

As Whitehead (2007) argues, addressing deficits through health programmes can play a significant role in benefitting individuals and communities in disadvantaged circumstances. Having a deficit of healthy eating and cooking literacy on a low income can be a significant disadvantage to maintaining good health. The current study has shown with low income communities that interactive learning of healthy cooking can bring affordable healthy changes to the preparation of whānau meals. These types of cooking education programmes can be considered to be an appropriate tool, to help in the fight for better health outcomes for communities at risk. Through implementing these programmes in these communities, empowering them with the understanding and the skills to cook and eat more fruits and vegetables simply and more affordably, they can cook using less of the unhealthy ultra-processed foods.

Increasing access for these communities to be involved in well researched innovative health education actions, to help increase their consumption of fruits and

vegetables and reduce the reliance on ultra-processed foods, can work as a means for empowerment. This would provide those individuals living on low incomes with the skills and know-how to self-manage their own sustainable healthy eating lifestyle with their families and their communities. Ruger (2010) argues that providing people living within lower socio-economic communities with the resource to manage their health capabilities may lead to them developing into agents of change, working towards sustainable participatory processes of change within their community. When individuals are supported in developing their know-how and skills, the individuals may support others in the community to develop their know-how and skill. Healthy lifestyle interventions based on learning how to cook affordable and healthy foods, implemented through participatory learning, and monitored through robust evaluations, can address the healthy cooking and eating deficit with communities and whānau.

I will end this thesis with a comment by one of my participants which I feel really sums up the value of the programme:

"My family are now learning to use heaps of vegetables, my family, now start cooking with lots of vegetables. Yes, they are, and we like it, more vegetables for my kids as well"

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