What are the Experiences of Māori with the Green Prescription Service?

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Whakatauki

Hutia te rito o te harakeke,	If you pluck out the centre shoot of the flax,
Kei whea te korimako e koo?	Where will the bellbird sing?
Ka rere ki uta, ka rere ki tai.	It will fly inland; it will fly seawards.
Ki mai koe ki au,	If you ask me,
He aha te mea nui i te ao?	What is the most important thing in the world?
Maaku e kii atu,	I will reply,
He Tangata, he Tangata, he Tangata!	It is people, it is people, it is people!

Mihimihi

Ngaa mihinui ki a koutou katoa

I te taha o toku Whaea

Ko Tainui te waka

Ko Moehau te maunga

Ko Tikapa te awa

Ko Hauraki te whenua

Ko Marutuahu te tangata

Ko Ngati Maru te iwi

Ko Te Aute te hapu

I te taha o toku papa

Ko Te Arawa te waka

Ko Tongariro te maunga

Ko Taupo-nui-a-tia te awa

Ko Te Heuheu te tangata

Ko Ngati Tuwharetoa te iwi

Ko Poukura te marae

Ko Jewell Campbell taku ingoa

E noho ana au ki Kirikiriroa inaaianei

Ko tenei taku whenua o taku ngaakau inaaianei

Tenei au te tuhinga whakapae. (this is my thesis).

Abstract

The research was conducted to explore the experiences of Māori with the Green Prescription service. Additionally, I investigated variations of the GRx service that were culturally enhanced for Māori and then looked at the experiences of Māori with a culturally enhanced service.

Approach

I aimed to apply the values of kaupapa Māori and to employ principles of tikanga deemed appropriate for a kanohi-ki-te-kanohi interview. Participants were recruited from a range of communities throughout the Waikato that include Te Runanga o Kirikiriroa, Hale Health Wellness centre, Te Kohao Health services, and the Waikato University. Seven qualitative interviews took place. Single interviews ranging from 30-80 minutes took place with participants that met the criteria; that is, to be of Māori ethnicity and to have used the GRx service.

Participants comprised two males and five females, all of whom were over 18 years of age. The interviews were audio-recorded, transcribed verbatim, and thematically analysed.

Results

Two main themes that emerged are the importance of whanaungatanga, and barriers and sacrifices with the GRx Service. The need for good relationships is essential for Māori to be able to engage and participate with the GRx service. For Māori, relationships are important and are the foundation for how future interactions will occur. Being comfortable, needing the whakawhanaungatanga and pōwhiri process, and having workplace and peer support are sub-themes of the first theme. The second theme focuses on the barriers and sacrifices that were identified from the interviews. Sub-themes include unhealthy food is more affordable; the difficulty of talking about being unhealthy, unfit, and personal circumstances; the importance of knowing the kaupapa; and participants never having heard about the GRx service before being referred.

Conclusion

Tikanga and kaupapa Māori strategies, such as beginning with whakawhanaungatanga and pōwhiri, culturally enhance the experience for Māori who use the GRx service. Understanding the barriers for Māori within mainstream health services, such as the GRx service, and addressing ways to alleviate these barriers are equally important. These are essential for positively influencing engagement, participation, and health outcomes for

Māori within health services.

Acknowledgments

The process, commitment, and endurance required to complete this thesis were not fully understood until I was in the throes of collecting data, writing each section according to academic requirements, and editing, re-editing, and even more editing. This kaupapa was a journey combined with the responsibilities of being a mother, grandmother, wife, daughter, aunt, and friend; as well as working full-time and having other responsibilities in the community.

The patience of those who supported, encouraged, and nagged me to hurry up and finish has been gratefully noted and appreciated.

It has been a long journey and, on reflection, would not have been completed without the support and assistance of The Health Research Council and the funding provided to embark on this project, my supervisors Dr. Isaac Warbrick and Professor Denise Wilson, and the administration and staff at AUT.

A special thanks to my parents for raising me in a safe and loving home and providing me with every necessity I could ever have needed. Thanks to my extended family for being part of the village that raised me, my children, and who support the raising of my grandchildren. To my children, for changing my life and inspiring me to set a high standard of achievement that is not always easily attained by Māori wahine. My grandbabies, thank you for reminding me of the miracle of creating life and the importance of whakapapa.

Finally, I am grateful to be Māori and to have the opportunity to potentially make a difference in some way towards positive health outcomes for Māori.

Explanation of Māori Terms

Hapū	Kinship group
Hinengaro	Mental
Hauora	Health, wellness
Ihi	Essential force
Iwi	Extended kinship group
Kai	Food
Kai Moana	Seafood
Kanohi-ki-te-kanohi	Face-to-face
Kaupapa	matter for discussion, purpose
Kaupapa Māori	Māori approach
Kotahitanga	Unity
Mana	authoritative, valid
Manaakitanga	Hospitality, the process of showing respect
Maunga	Mountain
Mauri	Life principle, life force
Mokopuna	Grandchildren
Pākehā	introduced from or originating in a foreign country
Pou	elevate on poles
Pōwhiri	To welcome, invite, beckon,
Taki	Lead
Tamariki	Children; normally used only in the plural
Tapu	To be sacred

Te Ao Māori	Māori world view
Tikanga	Correct procedure, custom
Tinana	The physical dimension or body
Tiriti o Waitangi	the treaty of Waitangi
Tupuna	Ancestors
Wahine	Female
Wairua	Spirit
Wehi	Dread, fear, something awesome
Whakamā	To be ashamed, shy
Whakataukī	Proverb
Whanau	(Extended) Family
Whakawhanaungatanga	the process of establishing relationships
Whanaungatanga	Relationship
Whare Tapa Whā	Māori health model based on the four walls of the pou

(Moorfield, 2005, p. 2)

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Attestation of Authorship

I hereby declare that this submission is my 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 acknowledgments), nor 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.

Jewell Albert, 21 October 2020

Chapter 1 Introduction

1.1 Introduction

For the last 30 years, governments around the globe have responded to the World Health Organization's (WHO) 1977 initiative, *Health for All by the Year 2000* (Mahler, 1981). Responses have included both the evaluation and adoption of additional health care programs that were outside mainstream health programs (Kohl 3rd et al., 2012). The social and economic determinants of people's health have been at least a partial focus for these additional programs (Marmot, 2005). One such program was the United Kingdom's, *Health of the Nation* strategy, implemented in 1992 with its slogan 'to add life to years and add years to life' (Hunter et al., 2000). The *Health of the Nation* strategy saw the establishment of exercise prescription schemes that were designed to utilize physical activity for the reduction of the incidence of coronary heart disease (Jones et al., 2005). The *Health of the Nation* strategy was the catalyst for more recent United Kingdom government initiatives that focus on the role of physical activity in addressing health problems.

1.2 Green Prescription

The New Zealand Green Prescription (GRx) health service was adapted from the *Health of the Nation* initiative. Similar to the *Health of the Nation* initiative, the GRx service is designed to increase the health and well-being of participants through increased physical activity and an improved diet (Patel et al., 2011). The GRx service commenced in 1998 and was initially managed by Sport and Recreation New Zealand (O'Neill & ihi Aotearoa, 2004) before management was transferred to the Ministry of Health (MOH) in 2009 (Yule, 2015).

A GRx is based on the prescription concept where written advice from a health professional to a patient or a family is aimed to encourage and support them to increase regular physical activity as part of a complete health plan (Swinburn et al., 1998). It is based on the national guidelines that recommend 30 minutes of moderate-intensity physical activity for at least five days of the week (Haskell et al., 2007).

A patient who would like regular support to improve physical activity and receive nutritional advice can be referred to a GRx support person with their nearest GRx provider. The GRx advisor will provide the patient with support and encouragement to become more active through:

- Monthly telephone calls
- Face-to-face meetings

- Group support in a community setting

A progress report is then provided back to their referring health professional (Tava'e & Nosa, 2012).

1.3 Significance

This research provides an evaluation of the responses of Māori to the New Zealand GRx service. During my work as a GRx coordinator, it became apparent among both Māori and non-Māori coordinators, that Māori GRx participants indicated different requirements with the way they received a GRx. Pringle (1998) and Williams (2014) evaluated the GRx program specifically for reaching Māori and receiving their perceptions (Pringle, 1998; Williams et al., 2014). Nationally, GRx is the leading health service allocated for the prevention and management of the non-communicable disease; and with the growing incidence of non-communicable diseases, research must contribute to the experiences of Māori with the GRx service. This study has explored the experiences of Māori with the GRx service and suggested mechanisms through which Māori responsiveness might be improved.

1.4 The rationale for the Research

In February 2014, I commenced an 18-month contract as a GRx co-ordinator for Sport Waikato. The main objective was to address the health of the client by educating them with ways to reduce sedentary behaviours and with healthy eating tips (Swinburn et al., 1998).

As a Māori, I was used to working with mainly Māori clients. This experience brought to light the need to engage with Māori in a way that positive health outcomes could be achieved. From my perspective, recognition of all areas of health needed addressing through Sir Mason Durries' Māori health model *Te Whare Tapa Whā*. This model promotes health using the analogy of the four pou that represent four areas of health. The four pou are wairua (the spiritual), hinengaro (the mind), tinana (the physical), and Whānau (the family). These four dimensions of the wharenui (meeting house) illustrate Māori well-being. Should one of the four dimensions become weak or damaged, a person may become unbalanced and unwell (Durie, 1994).

Being Māori and understanding tikanga and the principles encompassed in kaupapa Māori practice was to my advantage when working with Māori participants. By implementing these values and principles naturally into the service I provided, I was able to interact positively and productively with Māori GRx participants. Two examples of the tikanga principles I commonly used were whanaungatanga and kotahitanga. Whanaungatanga (kinship) helps to make a connection and is created through sharing experiences, working

together, and providing people with a sense of belonging. Kotahitanga is the unity of purpose and the unity through self-determination. Both whanaungatanga and kotahitanga were used to get to know the client and to establish the goal of the client.

At the end of my contract, I became concerned that, as the last Māori GRx coordinator working for Sport Waikato, there would be a gap where Māori using the service would miss out on its delivery in a way that could meet their needs culturally. Furthermore, as Māori represent a large percentage of clients requiring the GRx service, my concerns grew and led me to conduct this research.

1.5 Research Question

The initial questions for this research emerged because of my observations as a GRx co-ordinator who worked with Māori and non-Māori participants and alongside Māori and non-Māori GRx co-ordinators. My workplace observations made three issues very clear:

1. Māori participants reacted differently to the standard delivery format of the GRx service than non-Māori.
2. Non-Māori GRx co-ordinators were unable to engage with Māori participants to the same extent as Māori co-ordinators.
3. Māori participant attitudes toward, and outcomes of, the GRx service were significantly affected by the ethnicity of the co-ordinator.

Therefore, the primary research question for this study was: *What are the experiences of Māori with the GRx service?* A secondary research question was: *How can a GRx service be culturally enhanced to meet the health needs of Māori?* These two questions were concerned directly and exclusively with Māori participants and can only be answered from their perception of their personal experience. These questions were oriented to Māori experiences not as GRx participants but as Māori GRx participants, to receive their perspectives that are uniquely Māori. The question was not asked of the GRx institution and was not concerned with what the institution believes about the Māori GRx experience or the determinants of those experiences.

The final research question for this study was: *What are the experiences of Māori with a culturally enhanced GRx service?* It is of critical importance to understand, from a Māori client perspective, if a culturally enhanced service provides a superior GRx experience in comparison to a standard non-culturally enhanced service.

1.6 Research Process

This is a qualitative study that uses a kaupapa Māori framework to ensure cultural integrity. Semi-structured interviews in English were conducted with seven Māori participants. The participants were recipients of the GRx services from the Waikato region, most of which were living in Hamilton and Te Awamutu. The interviews were

conducted at a location that was first discussed between the interviewer and the participant. The participant needed to be interviewed in an environment that they were comfortable with. Five of the interviews were conducted at the participant's workplaces and two of the interviews were conducted at a place in their community. The data were analysed thematically to determine key themes and then discussed in the context of the research question and current literature.

1.7 Key Assumptions

This thesis is written with the assumption that Māori requires culturally appropriate healthcare services. By providing healthcare within the parameters of a kaupapa Māori framework, Māori engagement and participation in health services will improve with the potential to increase positive health outcomes for Māori. Furthermore, the expectation of healthcare services that are funded by the Ministry of Health is required to be responsive to Tiriti o Waitangi which has accountabilities.

1.8 Thesis Organisation

Chapter one provides an introduction and some background information.

Chapter two is a literature review that covers a full investigation of the GRx service in New Zealand and similar health services internationally. This section includes any benefits that have been found with the service, common barriers if any, and suggestions to improve the service.

Chapter three examines a brief history of the state of health of Māori and the known effects of colonization on Māori health. It investigates the importance of the GRx service for Māori and looks at health models and culturally appropriate ways health services can best cater to their needs. Māori view health from a more holistic platform and there are important cultural practices that are specifically valued by Māori (Hudson et al., 2010). As a familiar and widely accepted Māori health model in New Zealand, *Te Whare Tapa Whā* will be reviewed and reported as it relates to health and Māori. As a unified theory of health, *Te Whare Tapa Whā* can be used to design a response to complex health issues (Rochford, 2004). For these reasons and more, *Te Whare Tapa Whā* demonstrates strong qualities that can culturally enhance health services in New Zealand.

The research methodology is described in Chapter four—this qualitative study utilizes a kaupapa Māori research paradigm; along with the research methods used and the ethical considerations associated with this study. Analysis of participant responses enabled the identification of the central themes to emerge in Chapter five. Chapter six discuss these themes concerning the research questions and existing literature with arguments made for

changes to improve the GRx service culturally for Māori; and summarises the research.

Chapter 2 Literature Review

2.1 Introduction

There is a range of factors to consider for the application of public health strategies aimed at improving physical activity behaviours amongst sedentary populations. A GRx is a healthy lifestyle intervention aimed at doing just this. Regarding health, Māori experience disparities that are further compounded by physical inactivity; therefore, there is a strong recommendation that Māori should be at the forefront of physical activity initiatives such as the GRx. Furthermore, the intervention needs to be accessible, relevant, and sustainable for those populations that are targeted.

This literature review assessed peer-reviewed academic literature necessary for answering the research question: *What are the experiences of Māori with the GRx service?* The search strategy used to obtain the literature for this review included searching both Google scholar and the AUT library databases using the following terms: Green Prescription, Health of the Nation, Māori health, Te whare tapa Whā, Kaupapa Māori, qualitative research, and Māori health statistics. Grey and white paper documents such as statistics and evaluations carried out by the Ministry of Health have provided the data regarding incidence and prevalence rates across the years, Māori participation, and retention Each database search was restricted to peer-reviewed articles where possible. The keywords used were physical activity, the prevalence of physical inactivity, non- communicable disease, Māori health, and *Te Whare Tapa Whā*. The literature used for this review is as recent as the last 10 years. However, allowances have been made for older literature that can provide historical context.

The main objectives for this review are to assess the GRx service, Māori health, and potentially identify a rationale where the GRx service can be used to address disparities in health for Māori. Three critical sections that are covered in this review are the GRx service, barriers to this service for Māori, and Māori health.

2.2 Physical Activity

The WHO (2019) describes physical activity as "anybody movement created by skeletal muscles requiring energy expenditure" (Organization, 2020). However, the word 'physical activity' is not the same as 'exercise' and should not be confused. According to the WHO concept exercise is a subcategory of scheduled, disciplined, repetitive, and purposeful physical activity. Also, physical activity is not characterized as exercise but is used in other activities requiring physical activity and is done as part of play, employment, active travel, housework, and leisure activities (Organization, 2020).

There is adequate evidence that normal and appropriate physical activity levels are beneficial for the prevention of non-communicable diseases and premature mortality, both primary and secondary (Warburton et al., 2006). Warburton et al. (2006) selected findings that were included in systematic analyses, consensus statements, and meta-analysis, and proposed them as examples of widely regarded evidence. The Warburton et al. (2006) analysis reveals that there is a longitudinal association between the sum of physical exercise and health status. This means that the most physically active individuals are at the lowest risk of lifelong illness and premature mortality (Warburton et al., 2006). However, the more significant changes in health status are observed as people who are less fit and mentally healthy become physically active (Warburton et al., 2006). Warburton et al.'s study argue that health promotion efforts ought to reach people of all ages because the incidence of chronic disease will begin in infancy and rise with age (Warburton et al., 2006).

Heath et al (2012), understands Warburton et al. (2006) findings that physical activity must be a priority for health promotion agencies. They further document that regular physical activity protects against heart disease, obesity, diabetes, hypertension, depression, and other chronic conditions. Heath et al (2012) have described the need to consider physical activity interventions for a whole population from a community level that explores behavioural, social, policy, and environmental opportunities of promotion. Thus, intersectoral approaches that operate at various levels seem to be the most successful way to create physical activity improvements within a population (Heath et al., 2012).

Several approaches were found from this study that effectively handles elevated physical activity (Heath et al., 2012). Their results proposed the use of an information strategy for community-wide social media initiatives and brief messages of physical activity targeting key community sites (Heath et al., 2012). Examples of a community-wide social media initiative are the Stanford heart disease prevention program and the Wheeling Walks intervention. These are both large-scale, high-intensity, high visibility programming that use television, radio, newspaper, and other media to raise awareness, and disseminate health messages (Kahn et al., 2002).

Behavioural and social approaches are also useful, as was the implementation of social support for physical activity within the community and in the workplace. Examples of behavioural or social approaches include strategies that capitalize on social networks to reinforce physical activity behaviour and include the creation of a buddy system, behavioural contracts between participants and program leaders, or other physical activity sports groups (Lin et al., 2010).

A community setting would include a workplace, community centres, health facilities, parks, and recreation centres. This type of approach might include a variety of interventions such as personal trainers, behaviour-based sessions, phone follow-up, and even financial incentives to reinforce physical activity behaviours. These types of interventions are relevant to the public sector as many public health services are delivering primary health care (Brownson et al., 2007). The provider-based physical activity counselling has promising results when integrated into community efforts. Recorded evidence for health-care provider assessment that has office-based screening and advice followed up by telephone or community support has been shown to sustain long-term improvements in physical activity behaviour for patients (Pavey et al., 2011).

Also, these results mention the availability of school-based interventions such as physical education, games in the classroom, after-school sports, and active transport (Heath et al., 2012). Through the awareness of outreach programs, neighbourhood and street urban design and land use, active transport policies and practices, and community-wide policies and planning, there have been suggestions that support environmental and policy approaches that involve the creation and increased access to physical activity sites (Heath et al., 2012). Several interventions contribute to substantial changes in physical activity between various ages in the population, originating from various demographic classes, countries, and cultures (Heath et al., 2012). Overall, it should be a public health priority to ensure that communities and environments are safe and supportive of health and wellbeing (Heath et al., 2012).

Fiuza-Luces et al (2013) were able to draw valid conclusions about the beneficial role of physical activity by summarising the epidemiological literature supporting exercise benefits directly linked to its protective and therapeutic impact and the key biological mediators concerned. These results include epidemiological data that confirms and encourages the positive benefits of daily physical exercise that is likely to go beyond minimizing the risk of cardiovascular disease (Fiuza-Luces et al., 2013). They also find that these benefits can outweigh those of traditional drugs that have been proven to cause harmful multi-systemic side effects but are lower in cost (Fiuza-Luces et al., 2013).

In terms of physiological effects of routine physical exercise, Fiuza-Luces et al. (2013) observed that frequent physical exercise as a lifestyle practice can have an up-regulatory effect on hundreds of genes involved in tissue repair and homeostasis, indicating sophisticated crosstalk between muscles and other tissues (Fiuza-Luces et al., 2013). Once fitness modifications have been established, it is easier to consider the pathophysiology of chronic illness, which may help to further explore new clinical goals and methods (Fiuza-Luces et al., 2013). In terms of exercise, no drug intervention is successful in

preserving muscle fitness; a key factor in achieving healthy living at all periods of life (Fiuza-Luces et al., 2013). These results give a clear overview of how important routine physical exercise is to health and help guide the creation of strategies that need a global response to the epidemic of non-communicable diseases (Fiuza-Luces et al., 2013). Fiuza-Luces et al build on the initial findings Warburton et al (2006) describes relating the importance physical activity plays for the prevention of chronic disease. Heath et al. (2012) acknowledges physical activity as a health promotion tool and discuss the concerns related to implementing physical activity strategies and the challenges of developing sustained physical activity. Fiuza et al. (2013) describe the intricate physiological effects of physical activity from a more clinical perspective and demonstrates the overall effectiveness of physical activity compared to any known drug intervention. Fiuza et al. (2013) consider the risky side effects a drug might have on the patient in comparison to the low-risk side effects of physical activity and its benefits of being a low-cost intervention.

In addition to the studies that have been discussed thus far including some cultural aspects mentioned in Heath et al. (2013), Conn et al. (2014) has taken a more focused approach with a cultural lens and considered the impact this has had on health inequality for some ethnic groups. Conn et al understand that to reduce health inequality underpins the need for further studies to find successful measures that change health habits that are known to influence disease risk, including physical activity activities (Conn et al., 2014). Receptivity to health messaging is heavily affected by attitudes, ideals, perceptions of life, community backgrounds, and social identity (Conn et al., 2014). A core feature of this study is the recognition of culturally appropriate characteristics that facilitate the most important change in physical activity behaviour for any given population (Conn et al., 2014). Besides, a study of the contextual importance of physical exercise approaches for under-represented groups was carried out (Conn et al., 2014). The techniques described in this analysis include seeking information from members of the community, relating intervention material to beliefs, resolving language and literacy issues, using public media statistics, introducing culturally appropriate modes of physical activity, recognizing, and overcoming demographic barriers to action (Conn et al., 2014).

Cultural and national minorities in the United States (U.S) suffer overwhelmingly from chronic diseases. These racial and ethnic health gaps must be resolved, as their pressure on the public health sector continues to grow and these under-represented people are estimated to account for approximately 50 % of the overall U.S. population by 2050 (Dressler et al., 2005). Approximately 40% of all health burden in New Zealand is due to chronic diseases. Outcomes for Māori are significantly worse than non- Maori; these

inequities mirror those found in indigenous communities elsewhere (Oetzel et al., 2017).

2.3 The Prevalence of Inactivity

About 30-40 percent of the world's population, living in both developed and emerging countries, are inactive (Babwah & Nunes, 2010). In 2012, Lee et al. published a study of how many non-communicable disorders are due to physical inactivity (Lee et al., 2012). Their study reports that there are 5.3 million deaths per year due to physical inactivity (Lee et al., 2012). Also, they determined that if the rate of inactivity reduced by 25%, 1.3 million deaths a year could be avoided (Lee et al., 2012).

To obtain their results, Lee et al. (2012) studied the population attributable fractions that are associated with physical inactivity (Lee et al., 2012). The population attributable fraction is the method used by epidemiologists to measure the influence of the disease risk factor on the population (Lee et al., 2012). The results of this research indicate that almost all people will be physically involved at very moderate amounts (e.g., 15-30 minutes a day of fast walking) (Lee et al., 2012). At these modest levels of physical exercise, substantial health effects can be found. The writers proposed that all paths and attempts to minimize physical inactivity around the world be pursued (Lee et al., 2012).

2.4 Non-Communicable Disease

'Non-communicable disease,' 'chronic disease,' and 'life-style disease' are terms used to describe diseases that are non-infectious and cannot be spread from person to person. (Beaglehole & Yach, 2003). Tobacco and alcohol use, physical inactivity, and an unhealthful diet is considered to increase the risk of these diseases by modifiable behaviours (Beaglehole et al., 2011). In addition to modifiable behavioural risk factors, there are metabolic risk factors that contribute to four major metabolic changes that increase the risk of chronic disease. These include increased blood pressure, being overweight, obesity, high blood glucose levels, and high blood fat levels (Beaglehole et al., 2011). The impacts of these factors are not instantly observable (as in the case of an infectious virus) but develop over one's lifespan (Beaglehole et al., 2011).

The Global Status Report on non-communicable diseases refers to the non-communicable disease as an invisible epidemic (Matheson et al., 2013). This is due to the long-term nature of the chronic disease and the generally slow progression that often goes unnoticed (Sorel, 2019). Furthermore, the non-communicable disease has been identified as an under-appreciated cause of poverty that impacts economic development in many countries (Heller et al., 2019). Non-communicable diseases associated with poverty build a pattern in which people are affected by behavioural risk factors that, in turn, result in non-communicable diseases being a core driver of the downward trend that leads families

to poverty (Maher & Sridhar, 2012). In cases where households do not have access to quality health services, they appear to give up or sink into financial struggles (Beaglehole & Yach, 2003). The disadvantaged end up struggling the most in both cases (Beaglehole & Yach, 2003).

Globally, cardiovascular disease, stroke, asthma, chronic pulmonary disease, and diabetes are the four major non-communicable disorders (Williams et al., 2018). The prevalence of chronic diseases is growing, and the number of individuals, families, and populations affected by these disorders is growing (Lee et al., 2012). A 2013 study examined low and middle-income countries that show that non-communicable diseases were responsible for the large burden of mortality and morbidity (Kankeu et al., 2013). Also, non-communicable diseases put a significant financial burden on affected households, of which poor households are the most financially impacted as they seek treatment (Kankeu et al., 2013). Medication represents the most significant cost to the consumer and the use of originator brand drugs contributes to higher than necessary prices (Kankeu et al., 2013). This additional expense discourages many people suffering from non- communicable diseases from getting the treatment they need (Kankeu et al., 2013). Further analysis is required to understand the costs borne by households related to non- communicable diseases (Kankeu et al., 2013).

2.5 Green Prescription

In Aotearoa, a GRx is available for people living with medical conditions that have the potential to be physically limiting or health threatening. This section reviews academic literature about the GRx service to provide a broader background on how the service has been used since its inception in New Zealand in 1997. Much of the research reviewed investigates the perceptions of general practitioners (GPs) that have prescribed the GRx service, and their experiences with the service. It also entails the cost-effectiveness of the GRx service, some of the known benefits and barriers, and suggestions to improve the service. Additionally, I have included research that investigates the relationship between the GRx as a holistic approach to health and the natural environment.

In 1998 Swinburn et al. recruited 37 GPs from Auckland and Dunedin, New Zealand, to engage in the GRx study (Swinburn et al., 1998). All participants attended the pre-trial learning session and were presented with certain details on the benefits of the activity, how to implement it, the exercise assessment document, and the GRx pad (Swinburn et al., 1998). The subjects used to gather evidence in the focus groups included: workout evaluation, constructive discussion, the prescription procedure, the efficacy of the tools and preparation offered, the relative importance of the GRx, and how the GPs can envision its usage in their future use (Swinburn et al., 1998).

As a result, the GPs felt relaxed reviewing and administering activities with and to clients (Swinburn et al., 1998). This research showed that overall written GP exercise advice (GRx) led to improved physical activity in sedentary clients, which was better than just providing verbal advice alone for six weeks (Swinburn et al., 1998). Furthermore, a prescription from a GP is an engaging paradigm that represents a well-nurtured interaction between the client and their doctor (Swinburn et al., 1998). This way of using a prescription provides a tangible reminder of the exercise goals jointly set by the GP and the client (Swinburn et al., 1998). In comparison, a GP prescription is an appealing model that reflects a well-maintained relationship between the patient and their practitioner (Swinburn et al., 1998). This method of using a prescription is a practical reminder of the activity targets mutually set by the GP and the patient (Swinburn et al., 1998). In addition, it was the GP's preference to give a GRx instead of providing verbal recommendations on its own and, generally, they thought that prescriptions were a helpful method for formalising and recording mutually agreed fitness targets (Swinburn et al., 1998). However, time restrictions have often been a major obstacle to the widespread adoption of GRx' (Swinburn et al., 1998). Besides, adequate preparation, resource material, and patient follow-up regimens have been identified as critical components for the effective application of the GRx approach (Swinburn et al., 1998). In conclusion, GPs seem to be very optimistic about the GRx framework and agree that it is useful for patients and achievable in general practice (Swinburn et al., 1998).

Pfeiffer et al (2001) published a study from another point of view (Pfeiffer et al., 2001). Their research determined whether a prescribed exercise prescription followed by verbal advice improved physical activity (Pfeiffer et al., 2001). Forty-nine older adults living in the group presented quantitative statistics on their activity patterns based on a questionnaire to their geriatricians (Pfeiffer et al., 2001). Participants were randomly put in a verbal advice-only group, a verbal advice plus a written prescription group, or a 'green' prescription group. Six weeks later the findings were assessed. They found that both groups had a marked rise in physical activity time (Pfeiffer et al., 2001). Due to the various consultation modalities, no major differences between groups were found (Pfeiffer et al., 2001). What they found, however, was that geriatrists can effectively encourage physical activity among sedentary older adults by providing purpose-oriented advice on physical activity (Pfeiffer et al., 2001).

Fourteen years later, Patel et al (2011) performed a parallel analysis with the primary objective of determining why GPs advise on physical exercise and prescribe GRx' (Patel et al., 2011). The secondary goal was to explore the views and perspectives of GRx therapy on stress treatment by GPs (Patel et al., 2011). They discovered that GPs provided

consultation for physical activity and recommended GRx for both preventive (e.g. weight control) and management (e.g. diabetes care) purposes (Patel et al., 2011). As reported by the GPs, the benefits of the GRx centred around two main themes: (i) a non-medication approach to a healthier lifestyle, and (Signal et al., 2008) supporting physical activity benefits (Patel et al., 2011). The only identified barrier for the GP to provide this service was the time constraints of the consultation (Patel et al., 2011). An interesting finding was that both general physical activity and prescribed physical activity prescribed were viewed by GPs as beneficial for the management of depression (Patel et al., 2011).

The cost of introducing preventive interventions is still a hot subject of debate. Elley et al. (2003) conducted a study on the cost-effectiveness of therapy for physical activity, in general, practice (Elley et al., 2004). Patients received verbal advice and a written prescription from their GP with a telephone specialist follow-up (Elley et al., 2003). Not only did they find that there was a significant increase in physical activity, but the incremental cost of converting one additional sedentary adult to active status over 12 months was NZ$1,756 in program costs (Elley et al., 2003). It was concluded that this approach was an inexpensive way to increase physical activity.

In 2013, Patel and colleagues studied a physical activity scripting method for those presenting with depressive tendencies and general mental wellbeing over 12 months in non-depressed, low-active, community-based elderly adults (Patel et al., 2013). This was called the Healthy Steps program, and two hundred and twenty- five participants took part (Patel et al., 2013). Participants were randomized to engage in either the standard time-based or modified GRx-based pedometer (Patel et al., 2013). Relevant tests were administered that measured depression, mental health functioning, and physical activity at baseline, post-intervention (3 months post-baseline), and 9-month follow-up (Patel et al., 2013). A positive correlation was found at the post-intervention stage where there was a rise in leisure-time physical activity and overall walking physical activity. A decline in depressive symptomatology and an improvement in perceived functioning of mental wellbeing independent of intervention distribution was reported (Patel et al., 2013). For participants in both intervention allocation sets, these changes were evident during the follow-up period (Patel et al., 2013). The findings suggest that in non-depressed, previously low- activity older adults, both the standard time-based GRx and the modified pedometer- based GRx are effective in maintaining and improving mental wellbeing (Patel et al., 2013).

Hamlin et al. (2016) published a study that quantified the efficacy of primary care physical activity intervention in improvements in physical activity levels 2-3 years after the initial prescription (Hamlin et al., 2016). Information was obtained from each participant

regarding their physical activity and health. Primary care physical activity training 2-3 years earlier was recommended for these clients (Hamlin et al., 2016). Participants were graded as either having completed or not having completed the curriculum (Hamlin et al., 2016). Participants who completed the program in the past 2-3 years recorded an average of 64 minutes of overall physical activity per week relative to those who had dropped out (Hamlin et al., 2016). Forty-two percent of adherence participants reported increased levels of physical activity after obtaining GRx compared to 29 percent in the non-adherence community (Hamlin et al., 2016). It was more likely that the adherence group is more likely to follow the physical activity recommendations for at least 150 minutes of physical activity per week and less likely to be sedentary (Hamlin et al., 2016). These results suggest that long-term benefits are more likely to exist for participants who have completed the GRx program (Hamlin et al., 2016). The primary outcome measure for clinical obesity studies is to monitor weight (Sellman et al., 2017). At times, this emphasis has ignored wider personal functioning indicators, including data on quality of life, reducing the overall health and lifespan of weight-loss outcomes.

Another randomized controlled study took a different approach to the introduction of the GRx program. This approach recognized the importance of addictive mechanisms in obesity and the need to incorporate the use of treatment and counselling to support people with obesity. It included the recruitment of 108 primary care patients and compared GRx plus Kia (a low-cost obesity treatment network offering continuous addiction-oriented support) with GRx alone over 12 months (Sellman et al., 2017).

Kia Ākina (meaning is an obesity recovery group and means to be encouraged and supported. Kia Ākina was developed from a study comparing Weight Watchers and Anonymous Overeaters (Sellman et al., 2017). The need for a group-based addiction treatment program for people with obesity who want to lose weight and provides continuous support has been identified as financially affordable (Sellman et al., 2017). Kia Ākina offers comprehensive psychosocial help, including abstinence and traditional weight-loss interventions that encourage self-discovery and emphasis on weight-loss based on positive new lifestyle rehabilitation (Sellman et al., 2017).

It is important to note that a GRx is primarily an intervention based on physical activity dosage with additional advice on nutrition. Interestingly, Kia Ākina GRx and GRx alone had similar proportions with a weight loss of 5% or higher, which is the primary outcome measure within the study (Sellman et al., 2017). What is noteworthy is that there have been more substantial increases in trust, quality of life metrics, and greater overall satisfaction with the assistance the Kia Ākina GRx participants received relative to the GRx participants (Sellman et al., 2017). The conclusion indicates that, despite modest

weight-loss results (Sellman et al., 2017), the psychosocial support offered by Kia Ākina improved treatment outcomes for people with obesity when paired with GRx.

Green Prescription and the Environment

When one acknowledges the growing prevalence of non-communicable diseases and the clear correlation it has with the lack of physical activity, environmental concerns include biodiversity loss, destruction of habitats, and socio-ecological issues. This has given rise to interest in recent calls for the advancement of integrative approaches to resolving these issues; also known as nature-based solutions.

An example of a nature-based solution is GRx, generally described as a nature-based health intervention (Robinson & Breed, 2019). It has been noted that GRx is primarily designed for clients with specified needs, with the potential to complement traditional medical treatments, and a specific focus on those with a chronic disease (Robinson & Breed, 2019). It has been thought that a GRx' can influence significant changes in the environment, and additionally positively impact economic, and social co-benefits (Robinson & Breed, 2019). This holistic philosophical viewpoint stresses the potential of a GRx co-benefit and the emphasis it places on a planetary approach to health (Robinson & Breed, 2019). However, further research is required to decide how this capacity can be achieved and to better appreciate the dynamics of the relationship between nature and human health (Robinson & Breed, 2019).

For Māori, a holistic approach that follows the Māori health paradigm of Sir Mason Durie that links one's wellbeing to one's physical, social, and mental environment is important. Like many indigenous people, the well-being of Māori lives is influenced by a complicated mix of cultural traditions, principles and uses, a history of colonialism and alienation from their territories, and a dynamic collection of modern-day cultural activities and their existence in the non-Māori world (Panelli & Tipa, 2007). For example, a significant number of Māori reside in urban communities with a range of experiences with traditional tribal practices (Panelli & Tipa, 2007). A 'shift to tradition,' including an improved understanding of culture-environmental relations, is strategically gained by several iwis (Panelli & Tipa, 2007). While iwi Māori has undergone significant change, they hold fast to strong, specific relationships with specific environments that enhance their cultural identity and practice (Panelli & Tipa, 2007). Panelli and Tipa (2007) argue that these relationships are seen as improving the understanding of the well-being of any community that remains linked to its traditional lands and resources through an active cultural connexion (Panelli & Tipa, 2007).

Respect for mauri and the life force of all-natural phenomena are included as iwi Māori

beliefs (e.g., mist, rock, water). Tipa and Tierney (2003) explained:

> *"(The) Protection of mauri has become one of the principal issues for contemporary freshwater management because Māori is increasingly concerned with the integrity of the waterways on which their survival and their cultural identity depend… A water body with a healthy mauri will sustain healthy ecosystems, support a range of cultural uses (including the gathering of mahinga kai), and reinforce the cultural identity of the people"* (Tipa & Teirney, 2003).

It has been proposed that, with further investigation and funding, there is potential for the GRx service to contribute to both health care and health- promoting public health programs while at the same time improving the natural environment (Robinson & Breed, 2019).

In summary, the literature addressed the experiences of GPs who have prescribed GRx, and how it can be improved either by verbal guidance, or by phone calls from a professional, or both. This research also looks at the cost-effectiveness of the GRx program and the overall potential of reducing cardiovascular disease and other mortality and morbidity factors to have a major economic impact. Also, the effect of increased physical activity has been studied for the long-term effects of improving mental wellbeing in undepressed, previously low-activity adults. This research has explored the advantages of completing a GRx program in terms of the long-term effects of continued daily physical activity. In addition to the GRX service, psychosocial counselling helps boost trust, quality of life metrics and overall Program satisfaction. Lastly, this review looked at what the potential benefits to the natural environment might be in conjunction with a GRx Program. The next section highlights the GRx's barriers and weaknesses, especially for Māori, and suggests possible solutions for Māori to overcome those problems.

2.6 Barriers for Māori with the GRx Service

Several studies that have investigated the effectiveness of a written prescription for exercise acknowledge this approach as an effective way to increase physical activity levels in sedentary individuals (Sallis et al., 2015; Elley et al., 2003; Kahn et al., 2002 Sevick et al., 2000). However, many of these come from GP perspectives. Handcock and Jenkins (2003) presented a study that has a specific focus on the expertise of graduates trained in the specialist field of exercise prescription (Handcock & Jenkins, 2003). These authors claimed that habitual physical activity is a complex challenge, and simple exercise

advice rarely works (Handcock & Jenkins, 2003). Habitual physical activity often requires expertise, time, monitoring, and support (Handcock & Jenkins, 2003). Thus, graduates backed by a four-year specialization in exercise prescription should arguably add value to the GRx process (Handcock & Jenkins, 2003).

In response to Handcock and Jenkins' (2003) study, Diana O'Neill who developed GRx from its early days in SPARC who then transferred it to the Ministry of Health, issued several clarifying statements. She began by saying that the GRx service has been implemented by more than two-thirds of New Zealand doctors, which is considerably more than Hancock and Jenkins had quoted. O'Neill proceeds by advising that the GRx service has since received international acclaim (O'Neill & ihi Aotearoa, 2004).

O'Neill (2004) continued with an appreciation that Handcock and Jenkins (2003) present a valid and reasonable rationale to use exercise specialist graduates to enhance the GRx service and support clients to improve their lifestyle. However, a significant lack of motivation is a more significant obstacle for New Zealanders trying to increase their levels of physical activity, and that it is critical that the focus is on training exercise professionals and sharing the message that being active can be easy and fun (O'Neill & ihi Aotearoa, 2004). Thus, the challenge for GRx client- support personnel is to encourage inactive, unmotivated people on how physical activity can be included in their daily life in creative and exciting ways (O'Neill & ihi Aotearoa, 2004). O'Neill also suggested that as GRx clients progress and incorporate more specialized exercise routines (over 80% of GRx' are issued for walking), the rationale to involve an accredited exercise specialist is stronger and more beneficial to the participant at this stage (O'Neill & ihi Aotearoa, 2004).

An interesting discussion was raised by McPhail and Schippers (2012) who affirm that medical professionals have experienced several barriers with physical activity promotion. Amongst these is the lack of time they have with a client to implement meaningful conversations around the promotion of increased physical activity and perceived success for changing physical activity behaviour in clients (McPhail & Schippers, 2012). New approaches to address some of the barriers for physical activity promotion include: "integrating community-based physical activity behaviour change interventions, providing clients with brief counselling during their GP consultation, and including the use of interactive behaviour change technology, all of which require a degree of specialist care" (McPhail & Schippers, 2012, pp. 3-4).

Foley et al. (2011) investigated the costs and outcomes associated with a community support mode of delivery of the GRx service compared to the cost and outcome of a phone support mode of delivery. Among the objectives were to compare the two modes for

outcome measures: this included their ability to penetrate high need ethnic communities (Māori, Pacific, and South Asian) (Foley et al., 2011). Foley et al. (2011) reported positive results for the community support mode of delivery, highlighting the importance of face-to-face support and social support in assisting sedentary New Zealanders to increase their physical activity (Foley et al., 2011). The concluding comments reported that the most significant penetration of ethnic populations was through the community support mode (Foley et al., 2011). The choice of the delivery mode should, therefore, be offered by the service to allow participants to choose their preferred mode of delivery to meet both their personal and cultural needs (Foley et al., 2011). Furthermore, the need to consider these types of specialist services is supported in the findings.

Foley et al. (2011) findings align well with Williams et al. (2014) conclusions that suggest Māori cultural approaches are needed to better engage and interact with participants who are Māori. Some examples of these approaches include whakawhanaungatanga and the importance of kanohi-ki-te-kanohi contact. These approaches can influence behaviours that may increase physical activity and improve the participant's choice towards healthy food consumption for those Māori who have been identified as most at risk of type 2 diabetes (Williams et al., 2014). Furthermore, in highlighting the cultural needs for Māori through the lens of a specialist approach, Warbrick et al. (2016) researched physically inactive Māori men and what they thought about physical activity. Warbrick et al. found that a critical motivator for physical activity with this cohort reflected a strong sense of 'brotherhood' and accountability to others when participating in sport and physical activity (Warbrick et al., 2016). These findings highlight the value of people and relationships who as a collective strive to promote their physical activity experiences as Māori men. Therefore, having a better understanding of relevant cultural values and motivators and implementing these into program designs can improve the success of health interventions (Warbrick et al., 2016).

From the aged perspective, Patel et al. (2013) dispute that not enough research exists that examines the barriers for adults aged 65 years and older when prescribed a (Patel et al., 2013). Their research aimed to explore what GPs understood were barriers for their older-aged patients to adhere to a GRx. Furthermore, this research investigated strategies that were used by GP's to assist their older aged patients in overcoming physical activity barriers and how they engaged with such initiatives (Patel et al., 2013). Patel et al. (2013) interviewed 15 GPs from the Auckland region in New Zealand and found that having a non-communicable disease, fear of getting injured, constraints with transport, having a set routine, and lacking confidence are barriers that face some of their older patients when deciding whether to become more physically active (Patel et al., 2013).

Patel et al. (2013) concluded that physical activity initiatives for the elderly, such as the GRx program, can play a vital role in helping confer health-related gains for sedentary older adults (Patel et al., 2013). To ensure that such interventions as a GRx continue on a long-term basis, practitioners need to be aware of and consider the barriers for older-aged patients when prescribing a GRx for physical activity (Patel et al., 2013).

An interesting study conducted by Gribben et al. (2000) aimed to investigate how sedentary living can impact health as a significant risk factor that can increase morbidity and mortality for those with many medical conditions including chronic diseases (Gribben et al., 2000). Additionally, they aimed to demonstrate the behaviours of GPs in the North Health region in 1997 towards the issuing of GRx packages including the circumstances of which a GRx was recommended and any barriers that were noticed with their use. Four hundred andthirty- three GPs were given packs and faxed a one-page questionnaire to be completed immediately (Gribben et al., 2000). The main reasons GPs' used a GRx were the need for an increase in physical activity and more exercise and the high-risk of medical conditions such as high blood pressure, heart disease, obesity, and diabetes (Gribben et al., 2000). The reasons for not prescribing a GRx were that GPs had already given the patient physical activity advice, there were concerns that a GRx was patronizing and too simple, and problems around compliance and restraints with time (Gribben et al., 2000). The research concluded that non-responders could be non-users and it was estimated that 48- 65% of targeted GPs used GRx (Gribben et al., 2000). Importantly, the noticeable barriers that were identified by the GPs in this research have supported the development of the GRx program which is now offered nationwide and tri-annually evaluated by independent researchers (Gribben et al., 2000).

This section has highlighted several known barriers that are familiar to the GRx service. Professional exercise specialists should be utilized within the GRx service to provide specialist exercise advice. O'Neill & ihi (2004) suggested that although specialized exercise advice is a valid recommendation, the challenge for GRx client-support personnel is to motivate sedentary, unmotivated recipients of the necessity of physical activity for their daily life (O'Neill & ihi Aotearoa, 2004). Further research is needed to support the need for a holistic approach to the type of specialist influences known to culturally enhance success for minority and ethnic populations. It was identified that clients that do not respond to a prescribed GRx from their GP, therefore, become the non-users of the service (Maher & Sridhar, 2012; O'Neill & ihi Aotearoa, 2004).

2.7 Solutions and Suggestions

Tava and Nosa (2012) appear to be the first to have conducted a study on the experiences of Pacific women who completed the GRx program (Tava'e & Nosa, 2012). Their

research utilized the use of in-depth interviews with 20 women who identified as pacific and who were aged 40 years and older. The participants for this research received the GRx service in the Auckland City and Counties Manukau area. On completion, they were discharged as independently active (Tava'e & Nosa, 2012). The results indicate that these participants enjoyed positive experiences with the GRx program and demonstrated improvements with regular physical activity, lifestyle behaviours, and consequently experienced overall health improvements (Tava'e & Nosa, 2012). Their positive experiences give credit to the atmosphere that was created by their peers being socially acceptable and friendly. The staff was accepting and welcoming of them and the exercise options and education workshop components were to their liking (Tava'e & Nosa, 2012).

Tava and Nosa (2012) concluded that Pacific women reported health improvements from their participation in the GRx program and that further research should be conducted to explore the benefits, acceptability, and health impact of the GRx for Pacific people (Tava'e & Nosa, 2012). However, it is not stated whether the GRx service offered to the Pacific women in this study was specifically designed to cater to their needs culturally.

Tava and Nosa (2012) suggest that an appropriate GRx service for Pacific women would be monthly telephone support for three months, or a community/face-to-face program at a local community or recreation centre for three to six months (Tava'e & Nosa, 2012). When reflecting on these findings, it was predominantly the social aspect of the program that provided the enjoyable experience and contributed to the participants' completion of the program (Tava'e & Nosa, 2012). I assume that the service provided by this GRx service was community-based with a strong social focus and a major contributing reason these participants enjoyed the experience. This can be an essential feature in designing a successful physical activity intervention for Pacific women. However, there was a limitation in the selection criteria for the participants of this research in that all participants were program graduates (Tava'e & Nosa, 2012). As graduates, they were more likely to have had positive experiences compared to those that did not complete (Tava'e & Nosa, 2012). It would be of interest to know the reasons for non-compliance by the Pacific women who failed to complete the Program (Tava & Nosa 2012).

The next study reviewed suggests that further research is required to provide better delivery of the GRx ActiveFamilies service for Māori (Anderson et al., 2015). Anderson et al. (2015) described the GRx Active Families program in Taranaki, where approximately half of the Māori children in the region are obese, and sought to evaluate its reach and engagement, especially for those most at risk of obesity (Anderson et al., 2015). Of the 109 participants, 39% were Māori, 57% New Zealand European, 3% Pacific, and 1% other ethnicities (Anderson et al., 2015). The mean age to enter was 10

years, and the mean amount of time to be involved with the program was five months (Anderson et al., 2015). Overall, 33 of the 60 participants who completed the program during the audit period graduated. They had taken steps towards a healthy lifestyle change (Anderson et al., 2015). When compared with New Zealand European children, a smaller proportion of Māori children graduated (Anderson et al., 2015).

The GRx Active Families in Taranaki program were successful in meeting a need for some obese/overweight children, but this was not the case for all families, in particular for those who were over-represented in childhood obesity statistics (Anderson et al., 2015). The lower success rate for Māori reflects on some of the issues with the program's implementation (Anderson et al., 2015). Funding restrictions limited the ability of the service to reach areas of deprivation in some Taranaki locations (Anderson et al., 2015). Because of this only, 68% of the eligible population in Taranaki were able to have access to the program (Anderson et al., 2015). If the program were more accessible for Māori, one would expect greater involvement (Anderson et al., 2015). Furthermore, Anderson et al. (2015) suggested that for this service to meet the needs of the community, it will require sufficient resourcing to allow a readily available service that meets the cultural needs of its participants, irrespective of socioeconomic or cultural barriers (Anderson et al., 2015).

The qualitative evaluations of this research have been positive overall. However, one frustration that was reported by the program's coordinators was the amount of time spent working with families who were not ready to change (Anderson et al., 2015). Therefore, the authors concluded that the program delivery for Māori required improvement (Anderson et al., 2015). They also recommended an assessment of readiness to make lifestyle changes to become an enrolment criterion for all participants (Anderson et al., 2015).

Patel et al. (2011) conducted interviews with GPs who indicated that physical activity prescribed using a GRx was beneficial for the management of depression (Patel et al., 2011). The GPs advised that a GRx might also be valuable to promote physical activity in currently healthy but low-active and sedentary individuals (Patel et al., 2011). GPs suggested that consultation time limitations on the administration of GRx be overcome by delegating more time-consuming activities to patient counsellors supporting the GRx program and assisting with the administration of GRx by realistic nurses (Patel et al., 2011).

Also, GRx therapy in combination with antidepressant medication can be helpful for depression treatment and needs more study (Patel et al., 2011). This trend emerged in the

results as GPs communicated discussions with patients about how to support themselves by engaging in physical activity to release endorphins and boost positive mood (Patel et al., 2011). In turn, involvement with physical activity in general, as well as through the GRx program, has been regarded by some GPs as helping to minimize the need for drug treatment or to minimize the dosage of antidepressant medication (Patel et al., 2011).

The next study was looking from a global viewpoint at physical activity strategies for wellbeing. It follows the view that primary care practitioners are best placed to affect a broad population at risk for a sedentary lifestyle (Petrella et al., 2007). What type of therapy these doctors offer, however, is unclear (Petrella et al., 2007). The study used a large sample of primary care physicians in Canada (Petrella et al., 2007). To their knowledge, this was Canada's first longitudinal survey of primary care doctors, and one of the largest to track primary care physical activity therapy and drug habits (Petrella et al. 2007). The study's primary objective was to determine the distribution of therapy behaviours by primary care doctors, from simply informing patients about their exercise patterns to a more comprehensive evaluation of physical activity ability and prescribed activity prescriptions (Petrella et al., 2007). As a secondary goal, the authors explored related variables such as physician demographics and characteristics of practice thatmay help explain the patterns of counselling recorded physical activity (Petrella et al., 2007).

Most doctors reported using verbal therapy to encourage physical activity, while only 15.8 percent used written prescriptions for a program to promote physical activity (Petrella et al., 2007). It is interesting to note that male and female doctors reacted differently (Petrella et al., 2007). The men assessed fitness more frequently: while the women asked more often and gave verbal and written instructions (Petrella et al., 2007). This large sample of primary care physicians in Canada routinely asked patients about the levels of physical activity and advised them to use verbal therapy (Petrella et al., 2007). However, few of the respondents issued written recommendations made health tests, or referred patients (Petrella et al., 2007). These findings indicate future opportunities to enhance treatment and prescribing practices for physicians (Petrella et al., 2007).

Arsenijevic and Groot's (2017) systematic literature review and meta-analysis investigated variations with the nature of the physical activity (PARS) or a New Zealand GRx counterpart in different countries (Arsenijevic & Groot, 2017). They also investigate PARS adherence rate and how these differed from the self-reported level of physical activity among PARS users internationally (Arsenijevic & Groot, 2017). Thirty-seven studies conducted in 11 different countries in total met the inclusion criteria (Arsenijevic & Groot, 2017). Of these, 31 studies reported the adherence rate while 17 studies reported the level of physical activity (Arsenijevic & Groot, 2017). The meta-analysis showed that

PARS affected the adherence rate of physical activity, while the meta-regression results show that the adherence rate was influenced by Program characteristics such as chronic disease type and follow-up time (Arsenijevic & Groot, 2017).

The impact of PARS on adherence and self-reported physical activity was affected by features of the intervention and study design (Arsenijevic & Groot, 2017). Also, Arsenijevic and Groot (2017) suggested that future PARS efficacy studies should implement a prospective longitudinal method that utilizes both quantitative and qualitative data (Arsenijevic & Groot, 2017). Also, future research should develop a comprehensive process that can note the difference between assessing the rate of adherence and self-reported physical activity among participants with various chronic diseases (Arsenijevic & Groot, 2017).

Although it is not currently a program priority, the researchers suggested the inclusion of nutrition education in the GRx initiative for the next study; particularly for the 55% of clients who changed their diet while on the program (Elliot & Hamlin, 2018). Aphysical activity prescription with a complimentary nutrition education component may support the largest group of clients reporting metabolic health problems (Elliot & Hamlin, 2018).

Those who changed their diet were more likely to lose weight, lower blood pressure and lower cholesterol relative to the control group in clients who reported metabolic health problems (Elliot & Hamlin, 2018). Also, those who increased their physical activity were 5.2 times more likely to lose weight as compared to controls (Elliot & Hamlin, 2018). Clients who both increased their physical activity and improved their diet were more likely than those who only changed one to have health improvements (Elliot & Hamlin, 2018). There were much higher chances of weight loss in clients changing both behaviours than altering only either physical activity or diet. (Elliott & Hamlin, 2018).

Summary

A selection of ideas and guidelines were drawn up from the literature examined. First, the positive experiences recorded by a study for Pacific women who used a GRx were due to the social and pleasant environment offered by peers, staff, exercise choices, and components of the training workshop. The participants not only reported changes in their physical activity, but also their habits in the lifestyle and, ultimately, overall health benefits.

These results could potentially help address a request made for Māori by the Taranaki study which recommended improvement in the delivery of GRx Active Families. Although the overall results were largely good, progress was required in delivering the curriculum to Māori. They also recognized the need for adequate funding to provide a

service that was readily accessible to meet the cultural needs of its users, regardless of socio-economic or cultural barriers. Their data do indicate a GRx is helpful for clients with pre-existing conditions and weight issues. Also, there are advantages to rising physical activity in sedentary individuals that are stress-free but at risk for potential health-related concerns because of their inactive lifestyles. Recommendations were made that time limitations with GP appointments can be alleviated by delegating the more time-consuming activities to counsellors for client care and having proactive nurses help with GRx 'administration. Also, GRx therapy can be helpful for the treatment of depression in combination with antidepressant medication but needs more study.

Lastly, the findings from a global study confirm that physical activity on prescription schemes, with the inclusion of nutrition education, could benefit most clients who report metabolic health problems. The next section describes the use of *Te Whare Tapa Whā,* an assessment tool and a well-respected Māori health model, alongside the components of a GRx.

2.9 Māori Health

The WHO acknowledged the unique spiritual and cultural relationship between indigenous peoples and the physical environment in a declaration at Sundsvall in 1991 and believes that this relationship provides major lessons for the rest of the world (Rochford, 2004). According to the WHO, the right of indigenous peoples to protect their cultural heritage is central to their safe development (Rochford, 2004).

There are several variables to consider when assessing public health interventions that seek to minimize inactivity, such as the GRx program. For the individuals targeted, the intervention should be accessible, meaningful, and sustainable (Heke, 2017). With Māori experiencing health disparities that are only compounded by their inactivity rates, the emphasis should be on tailored Māori physical activity services (Heke, 2017). Deciding how to involve Māori and how Māori can connect to an initiative should also be a subject for researchers and public health practitioners alike to consider (Heke, 2017).

It is important to explain who Māori is to get an understanding of their health characteristics. The Māori have a distinct history and are New Zealand's indigenous people (Robson & Reid, 2001). Robson and Reid (2001) stated that the identity of Māori is based on Whānau (family), hapū (subtribe), and iwi (tribal affiliations) (Robson & Reid, 2001). Whakapapa (kinship and descent) continues to be a component of Māori identity (Robson & Reid, 2001). The identity of a Māori individual is gleaned by inquiring, "Where are you from? “Instead of," What is your name? "Māori identity is based on an ancestral waka (canoe), a physical landmark — typically a Maunga (mountain), a water

source, awa (river), Moana (Zealand) — and a significant Tupuna (ancestor) (Walker, 2013).

Moreover, in Māori cultural heritage, which is a vital component of Māori identity, Māori ideas and beliefs, te reo Māori, tikanga Māori, genealogy, natural resources, and Matauranga Māori are all accepted (Ratima, 2001). The realities that Māori lives in are diverse socially, culturally, economically, and politically (Ratima, 2001). Also, Ratima (2001) proposed that access to the Māori world is key to the achievement of a healthy Māori identity that has been connected to good health in turn (Ratima, 2001). Māori language and information, cultural and educational systems, economic capital (e.g. property and fisheries), and Māori social resources (e.g. Māori networks) are related in this sense by the Māori world (Ratima, 2001). Tangata whenua rights such as the right to self-determination, the right to equality in beliefs, the right to mutual well-being, the right to fair standard in intelligence, and the right to governance based on facts relevant for were outlined by (Robson & Reid, 2006).

Māori health disparities are further compounded by their inactivity rates and this should be considered at the forefront when developing health strategies. In this section several considerations have been mentioned that can improve Māori's access, engagement, and success towards positive health outcomes. Some of these suggestions include the need to support cultural identity strengthening by incorporating traditional cultural practices as part of a health service. The next section will look at the Māori health determinants.

2.10 Determinants of Health

As determinants of Māori wellbeing, variables such as population change, social engagement, environmental adaptation, and access to te ao Māori and health policies were all established (Durie, 2000). Moreover, the existence of health inequality, which consistently damages groups, illustrates socioeconomic inequity (O'Neill et al., 2014). Social determinants of health are aspects in which health is affected by natural, physical, legal, cultural, and political social influences (O'Neill et al., 2014).

While people in the lowest socioeconomic groups have consistently the worst health status, it has been shown that Māori has worse outcomes within these groups (Robson & Reid, 2001). Social isolation and inequality in resource distribution make racism a core element of the ethnic health disparities (Nazroo & Karlsen, 2001). Socioeconomic disparities are reducible and attempts to improve Māori health support society more broadly (Hudson, 2004). Māori health models are gradually incorporated into the health system to enhance the service's cultural responsiveness (Wilson et al., 2018).

A rise in the number of Māori health care providers has led to positive change in Māori

health and has provided Māori the opportunity to establish leadership positions in the sector (Māori, 1994). Also, Māori adults were almost twice as likely to have encountered racial discrimination as non-Māori adults (Kahukura, 2015). The racial discrimination experience is often associated with poor health outcomes and impacts a wide variety of risk factors (Harris et al., 2012).

In 2015, Williams et al. investigated the GRx health service among Māori in the Waikato and Ngati Tuwharetoa rohe (Williams et al., 2015). This study responded to Māori's low national participation rate in GRx at the time (Williams et al., 2015). A revamped GRx program was conducted for adult Māori in the Waikato and Ngati Tuwharetoa rohe in 2004-2006 (Williams et al., 2015). The study aimed to examine what they thought would inspire Māori to engage in the GRx with those involved (Williams et al., 2015). There was 60 face to face interviews (Williams et al., 2015). These interviews revealed five themes important to Māori participation:

- Purpose – all participants reported upon the importance of a tailored program.
  Low awareness-the lack of understanding of the national GRx service was exposed by all participants.
  Face-to-face engagement preference: all respondents indicated that the GRx service delivery should be face-to-face communication to ensure that participants engage and feel safe.
  Reliability of the Māori community health worker: some participants commented that it was important to meet and see the community health worker in the group.

  Stable networks-many respondents shared gratitude for the study facilitators having the time to engage with them by creating a bond (i.e. whakawhanaungatanga) through family or social connexions (Williams et al., 2015).

Based on these findings, an analysis is required to investigate how to develop a shared link, retain interaction and provide relevant knowledge and how to adapt to the current context of the lifestyles of participants. (Williams et al., 2015). Further research is required to develop guidelines regarding the establishment of preferred contact time, the nature of ongoing communication (e.g., help alone vs. ongoing information/advice), reference/linkage with activity groups, and the utility/guidelines behind those groups (Williams et al., 2015). Williams et al. (2015) concluded that Māori cultural interventions, such as whanaungatanga through face-to-face contact, would lead to increased physical

activity and balanced food intake for Māori at greatest risk (Wang et al., 2010; Williams et al., 2015; Williams et al., 2017).

2.11 Te Whare Tapa Whā

Several Māori health models have been developed based on Māori principles, but the most commonly known and used model is Te Whare Tapa Whā (Crengle, 2000). This Māori health model can be seen as part of Māori's effort to reclaim control of its health services. It has sponsored the growth of a Māori health sector, which has contributed to health and community benefits (Rochford, 2004). During the 1980s, it became generally accepted as the chosen Māori definition of health and has since gained mainstream and popular use as a Māori health model (Glover, 2005).

Te Whare Tapa Whā represents a holistic approach in which health and well-being are described concerning the four walls of a secure house (Durie, 2000). With this understanding, a person is considered unwell if anyone or a combination of the four walls is weak, and healthy if all four walls are strong (Durie, 2000). This definition recognizes individual wellbeing as vital to the wellbeing of the whole Whānau, and vice versa (Durie, 2000). This paradigm for understanding Māori health was reported in 1984 by Mason Durie, and its use is now widespread among Māori and iwi healthcare, disability care providers, and clinicians (Durie, 1994). In comparison, Te Whare Tapa Whā is extended to several conditions to reveal the essence of problems from a Māori viewpoint (Durie, 1994). Te Whare Tapa Whā presents a view that a compromise between te taha wairua (the spiritual), te taha hinengaro (the mental), te taha tinana (the physical), and me te taha Whānau (the family) is needed for the necessary ingredients for good health. Māori health is systemic and identifies the relationships in the model between each of the elements described in Te Whare Tapa Whā and other elements that are not specific (Pitama et al., 2007).

Te Whare Tapa Whā forms the foundation of many practice frameworks, specifically the Meihana model, which encompasses the four original cornerstones with the insertion of two additional elements (Pitama et al., 2007). Tai refers to the actual physical world that examines the effect it has on the client / Whānau, and iwi katoa refers to the social influence on the client / Whānau, which measures the degree to which the client / Whānau well-being is influenced by existing social attitudes, values, and resources (Pitama et al., 2007). This model provides the basis for a more rigorous customer / Whānau appraisal, which then underpins effective care decisions (Pitama et al., 2007).

Health Programs addressing Māori health requirements have long been asked for by

Māori (Rochford, 2004). Health services are now being built by Māori and represent their perspective (Rochford, 2004). Health systems have disappointed Māori in the past. Māori needs health facilities that are given in a culturally safe way and are compliant with cultural values (Rochford, 2004).

A key to improving Māori health is to minimize the risks of behaviours such as smoking, alcohol intake, inactivity, and poor nutrition that have been reported as causing significant health problems for Māori (Pomare et al., 1995). This involves changing lifestyle habits which are often long-established (Pomare et al., 1995). There is evidence that through early identification of the problem, proper health education, and early access to primary health care, many Māori illnesses, infections, and early deaths can be prevented. (Rochford, 2004). To facilitate these improvements and respond to established diseases, Māori needs to access quality health services (Rochford, 2004). Health facilities designed for Māori must be aware of the challenges and take them into account while dealing with Māori.

Māori have always relied on the natural landscape to provide fresh fruit and vegetables, and the fisheries to provide kai moana. Without these natural resources, people will be forced to rely on processed foods from outside the community. This has been an identified health problem for Māori health officials for many years. In 1999, the Minister of Māori affairs at the time, Tariana Turia, gave a speech at an international conference for diabetes and indigenous people in Christchurch (Pistacchi, 2008). Her speech specifically related Māori's wellbeing and well-being to its rivers, mountains, plains, lakes, forests, and seas. In her speech, she associated illness, lifestyle, and climate with the ecological assumption that takes all life to become part of a system that sustains and constitutes it (Pistacchi, 2008). Also, Turia pointed out that the Whānau health solution must be based on Whānau, not individually oriented and that for Whānau to cope with the disease, they must all be knowledgeable about the disease, the treatment of the disease, and the role they can play (Pistacchi, 2008). Māori must discern what has gone wrong in their culture, so that the spiritual healing of the person and the community may begin (Tipa et al., 2016). Including taio to Te Whare Tapa Whā, Pitama et al. (2007) proposed that this dimension helps clinicians to gain an understanding of the physical conditions influencing their clients'/Whānau health (Pitama et al., 2007). Key risk factors, for example, such as exposure to abuse, inadequate housing, addiction, lack of access to resources, and poverty may all occur within the client / Whānau community (Pitama et al., 2007). The statements of Turia, however, are reiterated by Tipa et al. (2016), who stressed the need to take full account of the atmosphere by a term called ki uta ki tai (from the mountain to the seas) (Tipa et al., 2016). This concept is used by Māori to illustrate their holistic understanding

of freshwater ecosystems and the inherent relationship between the health and well-being of individuals and the ecosystem. (Tipa et al., 2016). Since they are closely tied to land, sea, atmosphere, and living beings, freshwater bodies should not be seen in isolation (G Tipa et al., 2016). This interaction means that in another, what exists in one will have flow-on consequences (Tipa et al., 2016).

2.12 Conclusion

This study is intended to collect Māori's interactions with the GRx service. As outlined in this chapter, the GRx service must address Māori's unique health and cultural needs to help reduce health inequities and enhance health outcomes for Māori. *Te Whare Tapa Whā* health model provides an understanding of health from a Māori perspective. This section of the review indicates that by introducing a holistic approach to health that encourages the integration of Whānau, tinana, hinengaro, and wairua, and maybe additional elements such as tai and iwi katoa from the Meihana model, Māori can access Programs that are culturally sensitive to their health needs and where they can achieve good health outcomes.

Chapter 3 Methodology

3.1 Introduction

Hirini Moko Mead wrote the following on the tikanga of research (Mead, 2016):

> "Processes, procedures, and consultation need to be correct so that in the end, everyone who is connected with the research project is enriched, empowered, enlightened and glad to have been a part of it" (Mead, 2016, p. 318).

This chapter identifies and explains the methodology and the rationale for this study. The primary purpose of the research is to collect the experiences of Māori with a GRx service and to identify culturally appropriate ways for Māori to access and participate effectively with this service. The theoretical framework for this study was chosen to allow the experiences of Māori to be collected and analysed using qualitative and kaupapa Māori research principles.

3.2 Qualitative Research

The experience derived from health, illness, and medical intervention cannot always be counted and measured (Braun & Clarke, 2013). Researchers, therefore, need an alternative approach to get an understanding of the experience of a person or community (Braun & Clarke, 2013). A fundamental feature of qualitative research is that it believes that there are several versions of truth or facts deriving from the experience of a person or community (Braun & Clarke, 2013). At its core, qualitative research tries to understand a specific research issue from the individual or community perspective (Braun & Clarke, 2013). It involves gathering, arranging, explaining, and analysing textual, verbal, or visual data generated by the person or community(Hammarberg et al., 2016). It requires ethical and rigorous methods because of qualitative research directly involving a person or a group (Cohen & Crabtree, 2008).

According to Sullivan-Bolyai et al. (2005), One of the key advantages of qualitative research is the ability to tailor approaches or strategies to those who are in the centre of the experience (Sullivan-Bolyai et al., 2005). It does this by primarily focusing on participants' experiences and views, rather than on what the researcher decides. It does this by primarily focusing on participants' experiences and views, rather than on what the researcher decides has meaning (Creswell, 2009; Sullivan- Bolyai et al., 2005).

Several researchers see qualitative methods as being particularly well suited to Māori. Qualitative research is considered to allow for a more equitable dialogue where power

can be exercised in ways that in many quantitative studies are not commonly acceptedor thought possible (Hammarberg et al., 2016).

For this study which seeks to understand Māori's experiences with the GRx service, a qualitative methodological approach is best suited for exploring and answering the research question. Qualitative research methodology, underpinned by a Kaupapa Māori research approach, allowed data collection and analysis in a way that best reflects Māori's experiences.

3.3 Kaupapa Māori Research

Kaupapa Māori is about creating the spaces for Māori realities within broader society (Pihama, 1993). As researchers, it is important to work in ways that are Tika from the very beginning of the research until its completion (Pihama, 1993). Also, social attitudes towards an expert and participant as an unqualified layperson are challenged in Kaupapa Māori study (Walker et al., 2006). In other words, kaupapa Māori research considers the researcher as the non-expert and the one who has come to ‘look, listen and understand’ (Walker et al., 2006). ’Participants’ are the experts; they best know what their needs and concerns are, and they can inform the researcher (Walker et al., 2006).

Kaupapa Māori research highlights the responsibility of Māori researchers (and non-Māori) to acknowledge Māori tikanga, practices, and people (Cram, 2001). As an expression of whanaungatanga, researchers should be prepared to share their stories, whakapapa, and connection with those ‘participants’ whom they are working with (Walsh-Tapiata, 2003). By defining the cultural, personal, and study histories of the researcher, participants, and collaborating communities may create confidence in the researcher (Walsh-Tapiata, 2003).

Glover (2002) indicated that an environment where observing Māori traditions is important for reaching a network of Māori participants (Glover, 2002). In 1999, Linda Smith identified seven Māori kaupapa activities that lead Māori experts:

1. Aroha ki te tangata (respect for people)
2. Kanohi kitea (the seen face; that is, present yourself to people face to face)
3. Titiro, whakarongo, korero (look, listen…speak)
4. Manaaki ki te tangata (share and host people, be generous)
5. Kia tupato (be cautious)
6. Kaua e takahia to mana o te tangata (do not trample over the mana of the people)
7. Kaua e mahaki (do not flaunt your knowledge) (Smith, 2000).

These elements have since been added to by kaupapa Māori theorists such as Leonie

Pihama, Russell Bishop, Kuini Jenkins, Cheryl Smith, and Taina Pohatu (Bishop, 1996; Pihama, 2001; Jenkins et al., 1994; Smith, 2000; Pohatu, 2003). The following kaupapa Māori research principles are particularly relevant to my study:

Tino Rangatiratanga – the principle of self-determination

Tino Rangatiratanga is about power and influence inside the cultural understandings and traditions of Māori (Bishop, 1996); it is about a Māori-centred policy where the emphasis and results are the concerns and needs of Māori (Bishop, 1996). Until the right to influence the research agenda is created, the agreed, valid standard is Māori world views and ways of doing it (Smith, 2003).

This principle is expressed in my study by providing a space for Māori who have participated in the GRx to speak freely and confidently about their experiences (Pihama, et al., 2002). This is also done by allowing participants to determine the interview location and time. Furthermore, the questions asked were open-ended and flexible to foster discussion of experiences and perspectives regarding the GRx service. Participants' perspectives as Māori were considered as meaningful guidance for shaping a more appropriate approach for the service. The principle of Tino Rangatiratanga is expressed in prioritizing a clearly 'informed' consent process, and reinforcement of the participant's voluntary decision and power to participate or withdraw from the study.

Taonga Tuku Iho - the principle of cultural aspiration

Throughout the interview process, Māori ways of learning, doing, and interpreting the world are recognized and considered true (Pihama et al., 2002) through the use of the cultural aspiration principle. The analysis of the knowledge collected for this study was categorized and themed to produce useful data specific to the needs of Māori. Analysis of the data was carried out by transcribing the interviews verbatim. The transcriptions were studied by reading and re-reading the experiences provided until relevant data were identified about the research question. The data were grouped based on the subject matter and themed accordingly (Pihama et al., 2002).

This process revealed two main themes that were used to address the research questions for this study. These two themes have informed this research of what is important to Māori from their experiences with the GRx service and can be used to educate the GRx service and other health services for improved health outcomes for Māori, and culturally appropriate ways of engaging and supporting Māori when using health services.

Ako Māori - the principle of culturally preferred pedagogy

This principle recognizes Māori-inherent and special teaching and learning methods, as

well as methods that may not be historically derived but are favoured by Māori (Pihama et al., 2002). By including *Te Whare Tapa Whā*, ~~as~~ a guide for the interviews.Responses were gathered that could be framed in connection with this health framework. One of the aims of the interviews was to identify ways of promoting healthy behaviour that aligns with Māori specific pedagogies such as *Te Whare Tapa Whā*. Two of the interview questions that were asked were specific to the *Te Whare Tapa Whā* Māori health model. The participants were asked; 1) Are you familiar with *Te Whare Tapa Whā*; if so, how important is this health model to you? 2) How could the GRx you received better embrace the principles of *Te Whare Tapa Whā*?

Kia piki ake I ngā raruraru o te kainga - the principle of socio-economic mediation

This principle asserts a need for kaupapa Māori research to be of positive benefit to Māori communities (Pihama et al., 2002). Furthermore, the potential to share these findings from an academic platform provides an opportunity for the experiences of Māori to be heard and considered from an evidence-based perspective.

Whānau - the principle of extended family structure

Whānau lies at the heart of kaupapa Māori. It underpins the history of Māori and understands the links that Māori has to each other and the world around them (Pihama et al., 2002). Whānau extends to the family but includes the concept of extended family and the creation of relationships and relationships between individuals The responsibility for the safety and care of data and study results is very much a collaborative term about study. The Whānau theory means that Māori have a common research vision (Smith, 2003), and will support research by family members. Generosity, collaboration, and reciprocity activities are related to the Whānau principle (Walker et al., 2006). However, similar concepts should underpin research for all indigenous people, which gives them self-determination, values their view of the world, and ensures that their cultural traditions are valued and upheld (Walker et al., 2006).

Barnes (2019) has proposed the development of research collaborations to minimize the perceived gap between those doing research and those being investigated. Such arrangements are defined as a vehicle by which the participating communities can be more useful for researchers, their work, and the information generated (Barnes, 2019). Also, research integrates the domain of power relations into knowledge-based companies to make clear how material and political power disparities are reflected in material differences in circumstances of differently empowered classes. The philosophies of those

with influence in this sense would be dominant over those of those who have less (Barnes, 2019).

As a fundamental principle that was adhered to during the process of recruitment, it was imperative that we respectfully approached organisations (extended Whānau) that were identified as key contacts. Furthermore, the adherence to culturally appropriate research principles throughout the recruitment process was observed and followed. As an example, all participants were provided with clear and concise instructions about the research and interview process. This information included their right as a participant to withdraw at any time. Counselling services were made available for the participant should they need counselling due to the research.

Te Tiriti o Waitangi

Another concept to be regarded within the kaupapa Māori theory was defined by Pihama (2001): Te Tiriti o Waitangi (1840), the text that describes the relationship in New Zealand between the Māori and the Crown. Te Tiriti, in this research context, guides how the relationship between health providers/policymakers and Māori should be conducted. It highlights the right of Māori to have a voice and leadership role in developing and delivering health services that are relevant to their aspirations (Pihama, 2001).

It is important to mention that racial discrimination is still contributing to poor health outcomes. As a researcher, particularly within a kaupapa Māori methodology, it is critical to thoroughly understand the history of colonisation and the intent and purpose of Te Tiriti O Waitangi to implement cultural safety. Furthermore, Oda and Rameka, (2012) recommend the importance of social awareness and socioeconomic issues and how they can advocate for and achieve changes inequity and social justice to improve Māori health (Oda & Rameka, 2012).

Āta - the principle of growing respectful relationships

Pohatu and Pohatu (2004) introduced the concept of Āta specifically as a transformative method within the field of social services (Pohatu & Pohatu, 2004). Specifically, the concept of Āta applies to the creation and nurture of relationships. When interacting with Māori, it serves as a guide to the understanding of relationships and health. This principle affirms the need to understand the importance of relationships and how they affect the ability of Māori to interact with health services. All the aspects in the following list explicitly describe how these relationships should be nurtured and incorporated into kaupapa Māori research.

Āta reflects on our relationships, negotiating boundaries, working with related behaviours to build and maintain secure space.

Whakawhanaungatanga encourages Māori to position themselves with others who are present. The recognition of these relationships opens a space for the formation of trust and the exchange of information (Walsh-Tapiata, 2003). Engaging the principles of Āta and the concept of whakawhanaungatanga, was a way of empowering participants and fostering a research setting where they felt safe with the researcher and the research process.

Walker et al. (2006) conducted research exploring kaupapa Māori principles, processes, and applications where they concluded that kaupapa Māori is a strategy for the empowerment and self-determination of Māori. Furthermore, kaupapa Māori research is a way to address some of the past power imbalances and is a radical, emancipatory, empowerment-oriented strategy and collaborative-based process. It also provides an opportunity to restore trust in 'tika' research (Walker et al., 2006).

Kaupapa Māori research can be extended to many of the criticisms of qualitative research more generally (S. Walker et al., 2006). Non-Māori scientists may ask: is kaupapa Māori research adequate to generate credible data to meet the rigors of research? Kaupapa Māori study is first a theory, then a technique that can deliver outstanding studies for Māori people that contribute to better policy, practice, and individual performance. Māori is the key beneficiaries of kaupapa Māori studies, and kaupapa Māori analysis should always concentrate on improving the quality of life for Māori (Walker et al., 2006).

3.5 Conclusion

A kaupapa Māori paradigm has the potential to provide positive outcomes for Māori who use the GRx service. By incorporating the elements and principles of kaupapa Māori research, the experiences and perspectives of Māori can be shared and interpreted through a Māori lens. In addition to understanding the perspectives of participants, it is the intention of this study that those who participate are enriched, empowered, enlightened, and have had their mana enhanced as part of this process.

Chapter 4 Methods

4.1 Introduction

In this chapter, the methods employed to collect data and the rationale for using these methods is determined. It includes who was involved, how the data were collected, and the approaches used to answer the research question. Ethical, cultural, and safety considerations are determined, as are the strategies that were employed to minimize risks.

This study was designed to examine the experiences of Māori with the GRx public health service. Furthermore, it investigates the cultural appropriateness of the service and ways the service can be adapted to meet both the cultural and health needs of Māori.

The researcher is responsible for representing the reality of the participant. Furthermore, as a kaupapa Māori research project, making space for Māori voices to be heard and considered valid is critical (Cram et al., 2003). To do this, the methods employed need to be culturally safe and culturally affirming. A kaupapa Māori approach must assess cultural sensitivity, reliability, and whether it can generate useful outcomes for Māori (Cram et al., 2003). Barnes (2019) shared the following well- known whakatauki in her introductory remarks for her research project titled: "*Kaupapa Māori: Explaining the ordinary*:"

> *Ko tau hikoi I runga i oku whariki*
>
> *Ko tau noho i toku whare*
>
> *E huakina ai toku tatau toku matapihi*
>
> "Your steps on my whariki, your respect for my home, open my doors and windows." (Barnes, 2000)

The whakatauaki was clarified in two separate ways by Barnes (2000). The first interpretation of this whakatauaki is that wairua, tinana, and hinengaro are involved in health, and all elements are important for pursuing health. A second interpretation is that researchers must tread carefully to open doors and windows. It implies that without respecting those who want to share and without understanding the researcher's duties and responsibility, information and expertise should not be demanded (Barnes, 2000). Kaupapa Māori study uses the definition with the opportunity and desirability of change by taking a stance that questions wider expectations and assumptions. Studies should be directed at making a positive impact (L. T. Smith, 2000).

Qualitative research methods provide a framework where realities and experiences can

be made valid. Henwood and Pidgeon (1994) confirmed that the strength of qualitative research is its ability to capture the participant's reality through their experiences (Henwood & Pidgeon, 1994). Several Māori researchers see qualitative methods as being particularly well suited to Māori; however, promoting an equal conversation to take place and negotiating power in ways not considered in more quantitative approaches is critical (Bryman, 1998). It is with this rationale that a qualitative method has been chosen, as guided by a kaupapa Māori perspective. Table 1 outlines the methods.

Table 1. Overview of methods undertaken

Recruitment	Friends, Whānau and colleagues
	Te Runanga O Kirikiriroa
	Hale Health
	Te Kohao Health services
	Waikato University
Interviews	Arrange a suitable time and place to meet for the interview
	Face to face audio-recorded interview
Ethical Consideration	Information sheet
	Informed consent forms
	AUT counselling services
Practice	Pōwhiri/welcome
	Whakawhanaungatanga
	Any questions or concerns
Safety	Suitable interview venues
	AUT counselling services
Restrictions	Risk to the reputation of health services
	Uncomfortable being interviewed

4.2 Kaupapa Māori

Walker et al. (2006) explored kaupapa Māori research, its principles, processes, and applications. They reviewed the development and main principles of kaupapa Māori research and describe and critique the processes (Walker et al., 2006). They concluded that kaupapa Māori research is a consistent approach for that involving Māori, which can enhance the self-determination of Māori people (Walker et al., 2006).

Kaupapa Māori research has considered the following:

- Kaupapa Māori research recognizes Māori cultural values and systems.

- Kaupapa Māori research challenges dominant Pākehā (non-Māori) constructions of research.
- Kaupapa Māori research determines the assumptions, values, key ideas, and priorities of research.
- Māori must maintain conceptual, methodological, and interpretive control over research.
- Kaupapa Māori is a philosophy that guides Māori research and ensures that Māori protocol is adhered to during research processes (S. Walker et al., 2006a, p. 333; 2006b).

The urge for research to be by Māori and using Māori cultural views is at the centre of kaupapa Māori research. It is also a tactic for the liberation of Māori and their self-determination. The study of Kaupapa Māori can correct past imbalances and is a viewpoint that ensures new ways of asking, seeing, and doing. The trust of Māori people in science has begun to restore Kaupapa Māori science (Walker et al., 2006)

4.3 Recruitment

The participants for this study were both past and present GRx patients who identifiedas Māori. There were no limitations for when or how long they had used the GRx service. As the age requirement to participate in the GRx service is 18 years of age and older, ethical approval standards were without the need for parental consent.

Generally, qualitative studies need a lower sample size than quantitative analyses. Reaching saturation is the target of a qualitative study. Saturation occurs when no more insights result from additional participants introduced to the sample. In qualitative research, Glaser and Strauss (1967) suggested the principle of saturation to achieve a sufficient sample size (Glaser & Strauss, 2017). Five was recommended by Creswell (1998), and Morse (1994) suggested at least six (Cresswell, 1998; Morse, 1994). These guidelines will help a researcher determine how many participants they will need, but ultimately, when saturation has been reached, the appropriate number should depend on (Ashour, 2019).

The size of the sample (7) was determined using Creswell (1998) and Morse's (1994) rationale (Cresswell, 1998; Morse, 1994). Recruiting suitable participants required connecting with friends, Whānau, and colleagues—whakawhanaungatanga is critical for this process (Love & Tilley, 2014). It allows the recruitment process to meet a kaupapa

Māori component of building and nurturing trusting relationships. It is my obligation as a researcher to be mindful of the duty to represent and have an attitude that shows reverence for Māori tikanga, traditions, and individuals (Cram, 2001). Researchers must be prepared to reveal personal information, their whakapapa, or the connexions they want to perform research with to the iwi, hapū, or whanau. In Kaupapa Māori study, the concept of an expert researcher is turned on its head and defines the participant as the expert and the researcher as the non-expert and the one who is there to 'look, listen and understand' (S. Walker et al., 2006a). Researchers will need to describe their cultural, educational, and study contexts in a way that helps individuals to determine whether the researcher is right for them (Walsh-Tapiata, 2003).

Ongoing conversations with crucial individuals helped to identify organizations, health services, and other individuals who could recommend and help recruit eligible participants requiring further whakawhanaungatanga. These conversations led to the list of organizations under ‘Recruitment’ in Table 1 and identified successful places for the recruitment of participants. The organizations were then approached by either Dr. Warbrick or me and asked whether they could assist in recruiting participants for this study. Key people within the organizations enquired of colleagues and friends who met the inclusion criteria and asked if they would like to participate in the study.

Each participant was given an AUT ethics approved information sheet and invited to contact the researcher if they had any questions or concerns. A copy of this sheet is available in Appendix A. The participants were asked to confirm their participation in a one-to-one interview and were provided with the following:

- The purpose of the interview.
- The expectations of them if they participated.
- An assurance that participation is voluntary, with the ability to withdraw at any time if they wish.
- That they would be audio recorded throughout the interview.
- An informed consent form which they are required to sign (see Appendix B).

The discussion was concluded once a suitable interview time, and a convenient, private interview venue that the participant was comfortable with was confirmed. A basic outline of the purpose of the interview was given and each participant advised that their participation was voluntary and that they could withdraw at any time if they wished.

4.4 Informed consent

Participation in a research project is voluntary and based on the understanding that adequate and appropriate information about participation is accessible. Information should be in simple, clear language appropriate to the potential participants. Participants must know:

- The names of the people responsible for the research.
- The procedures they will be asked to agree to participate in.
- The purpose of the research.
- That they can withdraw from the process without penalty.
- What will happen to the information once it is has been collected.
- Whether information obtained will be transcribed by another person. It is good practice to inform potential participants that the transcriber will be required to sign a confidentiality form.
- How confidentiality and anonymity will be protected.
- What will happen to the data on completion of the process?
- Whether they can see the final report.

This information is on the information sheet and the consent form which must be signed by each participant.

4.5 Restrictions

One restriction encountered during the recruitment phase was the response received from a Māori health provider. They feared that interviewing their patients might compromise the reputation of their organization. It was not the intention for this research and despite explaining this to them, along with the confidentiality processes in place, they were not prepared to take the risk. The only other barrier I experienced was getting Māori to commit to being interviewed. Interviews are not a natural process for many of the participants approached; consequently, this was not something they were comfortable with or open to doing. To address this barrier an information evening about the research with an emphasis on the benefits it would be for Māori would be a strategy to consider. It is strongly recommended that researchers consult with Māori before a research proposal is devised according to the Guidelines for Researchers on Health Research involving Māori (Zealand, 2010). Including Māori in initial discussions about a new research

proposal has huge benefits (The Māori Health Committee of the Health Research Council, 2008).

4.6 Ethical Considerations

Ethical considerations help to determine the difference between acceptable and unacceptable behaviour when conducting research. This process was completed before commencing the research and required the AUT Ethics Committee to examine the EA5 application form. As part of a rigorous procedure, all areas for this research were considered and reviewed. This procedure included the approval of the participant information sheet and the informed consent form. As part of the ethical requirements, the AUT counselling services were consulted, and they agreed to support any participants that experienced emotional stress or discomfort because they participated in this research.

4.7 Interviews

Kanohi-ki-te-kanohi interviewing is a methodological strategy that is considered a reliable and robust way to collect data (Boulton et al., 2005). For Māori, meeting kanohi-ki-te-kanohi is an acceptable and preferred method that is relevant and accountable regarding the relationship aspect (Milroy, 1996). Rewi (2014) emphasized the responsibility of a face-to-face relationship and the significance of being seen in the flesh. The level of trust is placed upon him by his participants and his commitment to them as whanaunga (Rewi, 2014).

The primary sources of data for this study are the interviews with Māori who had used a GRx service. In-depth, open-ended interviews were used to gather direct quotes about peoples' experiences, knowledge, feelings, and opinions (Patton, 1990) and used as a guide to drawing information from the participants. A copy of the interview questionnaire is Appendix C.

The interview questions were designed to investigate the participant's experience of the GRx service. The interviews were conducted in English and took on average between 30 and 115 minutes. The interviews were held at a location the participants were comfortable with and, consequently, were venues of their choice. Organic conversations about Whānau, tamariki, mokopuna, work, and details that were important ensured whakawhanaungatanga.

As previously mentioned, the interview was conducted using a semi-structured process. This approach allowed the participant the opportunity to discuss issues that are important to them but not anticipated (Patton, 2002). Additional questions were employed to assist the participants in elaborating about their experience or if they were having trouble clarifying their responses.

The ‘'Smart Recorder’ App on my Samsung phone was used to record the interview in conjunction with written notes by myself. The recorded interviews were saved and stored in a securely locked folder on a personal laptop. These details follow the process provided in the ethics application.

After each interview, the participant was offered a copy of the research when it is completed. As a token of appreciation, petrol vouchers were given to the participants who had travelled to the interview. Additionally, light refreshments were provided.

The safety issues that were of most concerns for the interview process were the interview venue and the need for counselling support after the interview if required. Interviews were carried out during the day, and all the venues were busy with people regularly dropping in. Although this research is a relatively low-level risk, it was a requirement from the ethics committee to employ the AUT counselling services as a precaution. These services were pre-arranged and offered in the information sheet and reinforced verbally before commencing the interview. Personal information would be kept confidential and unidentifiable.

4.8 Analysis of Findings

The analysis of findings is a process by which collected data is organized to address the research questions (Ratima, 2001). Each interview was recorded, and the responses transcribed verbatim, then thematically analysed to classify and present themes that relate to the data. This process deals in detail with diverse subjects via interpretations (Boyatzis, 1998). It is the most appropriate way for a study to discover using interpretations. It is a systematic process that allows the data to inform research (Boyatzis, 1998).

On completion of transcription, it was checked and then read thoroughly to identify significant themes and patterns. Two main themes emerged from the data, and corresponding sub-themes were identified.

4.9 Conclusion

The findings were compiled and then discussed further in the discussion section. The discussion section applied the themes to answer the research questions. The findings from the research data and the findings from the literature review were compared and used to make further recommendations. This section provided the rationale for conducting this research using qualitative methods that were guided by a kaupapa Māori protocol. Furthermore, a step-by-step description of the research method process has been provided. This process aligns with the steps described in Table 1. The next chapter lists the findings using themes and sub-themes that have emerged from the enquiry.

Chapter 5 Findings

5.1 Introduction

This study interviewed two Māori men and five Māori women who used the GRx service. The aim of this research was to explore the experiences of Māori with the GRx service. All participants resided in the Waikato region and are from relatively diverse backgrounds, including a variety of iwi affiliations. The recruitment process took around four months; seven participants were successfully recruited. This cohort consisted of two males and five females. Each participant had various reasons for participation; the most common reason was to support research projects that could help improve health outcomes for Māori. This chapter outlines the three themes that emerged, and the sub-themes associated with each central theme, as described in Table 2.

Table 2. Summary of themes and sub-themes

Themes	Sub-themes
The importance of whanaungatanga	• Whakawhanaungatanga and the pōwhiri process • Being comfortable • Workplace and peer support
Barriers and sacrifices	• Unhealthy food is more affordable • It is difficult to talk about being unhealthy, unfit, and personal issues • Do not add-on Māori concept • Important to know the kaupapa • Had never heard of a GRx before

5.2 The Importance of Whanaungatanga

This section discusses the importance of whanaungatanga. Relationship, kin, and sense of family connection are all principles of whanaungatanga. Whanaungatanga in the context of this research refers to a relationship through shared experiences and working together that provides a sense of belonging through positive and meaningful relationships. The relationship between the participant and the GRx coordinator has been identified as an essential component for participants to engage confidently with the GRx service. Once the relationship is established, there is a perceived belief that achieving success and reaching the individual's health potential is achievable. Being comfortable, needing

whakawhanaungatanga, a pōwhiri process, and having workplace support are the three sub-themes of whanaungatanga.

The GRx Program is an individual Program for adults 18 years and older who are not currently meeting the recommended 150 minutes per week of physical activity. A health professional can issue a patient with a GRx provided the patient's medical condition is stable. The patient is then referred to the nearest GRx provider if they want to receive ongoing support to increase their physical activity and improve nutrition.

Needing whakawhanaungatanga and a pōwhiri process

Whakawhanaungatanga and a pōwhiri process are mentioned throughout the data as the appropriate processes necessary for Māori to begin a new interaction with a health service. Beginning the relationship using whakawhanaungatanga and the pōwhiri process between the participant and the GRx coordinator is important and helps to address the potential of future communication and engagement barriers. It is anticipated that the participant can speak more freely, confidentially, and holistically about their personal experiences, lifestyle habits, Whānau, work, and living environment. All of which is helpful to the coordinator to provide the participant with a successful service.

The following statement provides the view of a participant who struggled to engage with their coordinator due to the deficit of appropriate relationship building using whakawhanaungatanga and a pōwhiri process. Participant 2 describes the experience with the following statements:

> *In terms of say the pōwhiri poutama stuff, for Māori a pōwhiri process there are lots of getting to know you first. We usually make connections through whakapapa or something.*
>
> *...really important [the pōwhiri process]... it would have been nice for me cos* [because] *it was the first meeting ...I was already feeling stink cos I have never really been in that space before, [being obese and unfit], that might have been nice.*

Participant 2 expressed feeling anxious and believed the whakawhanaungatanga/pōwhiri process would help soften those feelings. A need to establish a term of reference between the participant and the coordinator was voiced. This would have helped the participant understand any boundaries that needed to be known and relieved the anxiety that built from not knowing this. Due to the absence of a culturally appropriate process of engagement, Participant 2, further commented:

> *Yeah you know you are kind of anxious [and need] something to maybe soften that up… For Māori, I feel like the pōwhiri process helps peoplejust chill out and there is something in negotiating the terms of the relationship between [me] the help seeker and [the GRx coordinator] the helper.*

Being able to establish rapport with a GRx participant did not necessarily mean the coordinator needed to be Māori. Participant 4 describes the coordinator they were assigned to as being very good at what she did in terms of being able to work well with Māori, despite being Pākehā:

> *I think maybe she [coordinator] has been doing it for so long, or if she has got some Māori in her … or she has worked with Māori for so long… I am not sure, but she did that [relationship building, establishing a good rapport] well… I mean her experience in the field must be quite up there to be able to work with Māori people…*

The following comments elaborate more on the importance of the pōwhiri process and how it would have eliminated the participant feeling awkward and Whakamā to engage and ask questions. Being comfortable and feeling safe emerged again as essential components for active engagement with the GRx service. Participant 2 explained:

> *With the pōwhiri process, it would have been a little more comfortable and a little safer with the person that was helping me, and then it would have been easier for me to ask without the awkwardness…*

> *My Whakamā around asking questions was because perhaps there was not a lot of that linking first.*

Being comfortable

Being comfortable requires an active component of trust and confidence with each other. By establishing these attributes, progress and, therefore, success, is more achievable. Participant 6 commented:

> *Cos it [the relationship] built up our confidence… Personally, [I had] low self-esteem and was not fit at all. So that [relationship building] kind of really helped me quite a bit, and I found it good.*

Participant 5 stated:

> *Being comfortable – that was the most important thing to me.*

Four research participants participated in a workplace GRx group Program. This initiative

was well supported by their work colleagues and the management team. The workplace was built on kaupapa Māori principles that integrated daily tikanga practices. The workplace intervention was developed and directed by a GRx coordinator and ex-work colleague with whom the participants were familiar. Not all of them knew the coordinator well, but well enough to know she was respected by the organisation and familiar with their processes and ways of doing things.

The GRx coordinator provided a health service experience that included deliberate cultural practices. The Program began with proper introductions via a variation of the pōwhiri process at the local marae. They continued with regular karakia at each session and had in-depth open discussions around Māori kai and ways to make it healthier. A variety of group activities was offered such as walking together around a local lake, group exercise sessions, and other activities that they were comfortable with as a group.

Due to having this service provided in the working environment they were able to support each other at work, during meal breaks, and shared kai began to follow a healthy eating kaupapa for all of their work colleagues. The influence of the Program spread throughout the organization, which in turn provided additional support for those on the GRx Program, as well as having a flow-on effect for those around them.

The participants in this group strongly believe that the coordinator being Māori, familiar to them, and someone respectful and aware of their cultural needs and ways of doing things was a good match for them. Participant 6 explained:

> *To me, it helped that we knew her, well I did not know her that well, just you know hello …I don't want to be racist or anything like that but to me being Māori [the coordinator], because she understood… the way she presented herself … especially about Māori, it made us more comfortable it made me comfortable.*

Participant 7 agreed:

> *… she was familiar with our organization, familiar with our pou, manaakitanga, whanaungatanga… she was familiar with that, so it was easier for her… it started on the marae, so it was appropriate for her to do it in that space.*

Following on, Participant 7 added:

> *…it started on the marae where we signed up, and she used to come in every other week to do little workshops. I cannot remember what they were*

> *because this was a few years ago. Her energy levels were inviting and cool… she maintained professionalism when she was delivering.*

Due to the approach of this coordinator and the uniqueness of her Program in the workplace, she was able to break down barriers (e.g., the shame when talking about health and personal spaces). Participant 5 noted:

> *Just being open about certain things … "let us face it you do not… it is kind of embarrassing", but I think when she presented things in a different way to us it kind of made us feel comfortable… for me what I got out of it.*

Participant 6 stated:

> *It helped with [coordinator] being organized… she had the information we needed, and she focused on one taki for each week … and then she prepared us for the next one…Ok, we've covered this, and so she had a plan, and this is what we are going to cover next week ….She discussed things like; so, what's in your kai, what's in your food? Or what you can get as the best takeaway, that kind of stuff.*
>
> *It was relevant information to today's living. You can choose…you are a working mum… are too busy and do not think about it… or working parents… which choices from here to here would you make? Even down to costs…She looked at all of that, so it was relevant, interesting things that we all at times are too busy and do not think about, but she did the work and research and made it interesting…*

When a participant does not feel comfortable in the GRx space, the opportunity to interact effectively is missed. This often makes their willingness to participate with other health services less appealing.

The next comments are from the aunt of a younger GRx participant. She described how vulnerable GRx participants can be about their health:

> *She was quite young, but most of our Whānau are quite vulnerable even to be asked to go to a GRx because it's very personal, it's about your health, its long term, and no one's obese because they want to be because of its layers of hurt or whatever it is for them.* (Participant 5)

Participant 5 described the experience of her niece who received a GRx from the local regional Sport's Trust. This young wahine lost her father in a car accident when she was 10 years old. She moved from Rotorua to live with her aunt in Hamilton and felt quite

vulnerable due to the trauma of losing her dad and moving cities. As already mentioned, her experience was provided by her aunt, who herself was part of the workplace GRx Program. The aunt was able to compare her niece's experience with the GRx service to her own. She believes, had her niece received a culturally appropriate service that included whakawhanaungatanga, a pōwhiri process, and sound support systems, the Program could have provided a different experience.

> *So, I am sitting here being an Aunty of someone who used it and being here as a person who used it personally… for me because I have a strong opinion and if I feel like I need to say something I will. In regards to my niece and what she was going through, because she didn't speak up and I'm not saying, it's any fault of theirs, but if they could have given more support for her, encouraged her cos you normally can tell if someone's introverted or something like that and you need to do a little bit more…* (Participant 5)

The next comments come from Participant 3 who spent approximately one-year attending mainstream group fitness GRx Program and then moved into a different one that was influenced by a robust kaupapa Māori presence. He observed the following differences regarding the two approaches to delivering group exercise classes:

> *Conversations were different – [mainstream] GRx group fitness conversations were about politics, and work, the culturally enhanced group, talked about more personal and meaningful subjects like Whānau, whakapapa, making connections, and nurturing relationships… It happens naturally in the Māori context… Other elements happen freely without forcing anything.*

While this observation was not a negative comment towards mainstream GRx services, it illustrated the internalized cultural values that matter to Māori, particularly around making meaningful connections. For Māori, this is important and occurs naturally within whakawhanaungatanga and a pōwhiri process. It introduces the importance of 'mauri' and connecting with one's soul or wairua, and how this can happen organically with the right conversations in the right environment. Furthermore, this process encourages meaningful connections where Māori can sustain change long-term.

> *There is not anything negative in the [standard] GRx Program, but there is not that soul, that mauri.* (Participant 3)

Traditionally, the pōwhiri process served to assess whether the visiting party was a friend or foe. In modern times it is used for the same purpose but can be adapted into a variety

of situations such as engaging with health services and establishing safety within this space.

Needing more information about GRx

The GRx health service is not generally well-known to communities and individuals. The following comments are responses to being asked what the participant knew about the GRx service before starting the GRx Program:

> *I heard good things about this service through my work friends.* (Participant 1)

> *Not what I thought it would be. Thought it was a team of specialists.* (Participant 2)

> *I had no idea what a GRx was. Free gym membership and pool passes [advice they were given from their doctor]…* (Participant 3)

> *Did not have any knowledge about GRx.* (Participant 4)

> *Did not know about GRx.* (Participant 5)

> *Free gym.* (Participant 6)

More information and the way information are referred is needed about the GRx service before the patients engage in it. Such information includes how the Program works, what it is for, why they have been referred, what will be expected, an opportunity to ask questions and express any concerns, can they bring a support person, and options that they might have in terms of how they can receive their GRx service.

5.4 Barriers and Sacrifices

Unhealthy food is cheaper

The purchase of healthy food for some families did not fit the budget. It certainly was not an option for participants to allocate extra money to the food budget for themselves that was separate from the rest of the Whānau. For some, the budget restrictions were there to allow for the children, who were considered elite athletes, to eat the best food, as well as afford their sporting events. For Participant 1, going without for two weeks and living off of white bread and noodles was the only way to provide financially for the athlete children.

> *She tried hard with motivation, but it just did not fit with my lifestyle…With me, there was no time, and we are a ridiculously sporty family on one*

> *income… I am one of those people that does not let my children miss out on anything… If we have to eat white bread and noodles for three months so they can go to a tournament we will…* (Participant 1)

> *What stopped me from being good and losing weight is not relevant to most people…* (Participant 4)

> *Everything she sent me was good and valuable, but I did not necessarily implement it how she would have liked…I think for a normal family with money and time [it would have worked].* (Participant 5)

Additionally, people do not like to talk about how unhealthy they are and about their household. This reverts to the previous theme about building relationships. If relationship building has not occurred before these conversations, it becomes a barrier for the participant to disclose these personal details.

Māori concepts should not be add-ons

Te Whare Tapa Whā is a well-known Māori health model that adopts a holistic view of health and adapts the analogy of the four cornerstones of Māori health. The four cornerstones represent taha wairua (spiritual health), taha Whānau (family health), taha tinana (physical health), and taha hinengaro (mental health). Each dimension is seen as being equally important.

Although *Te Whare Tapa Whā* is a Māori health model, it is known to be useful to all ethnic groups and races. It has become popular in New Zealand, and more non-Māori organizations have adopted this model to enhance their services. However, participants viewed this, along with other Māori concepts, as a token gesture or the adding-on of a Māori concept. There is a strong view that this is disrespectful when non-Māori organizations use Māori concepts as add-ons. An add-on is described as the use of Māori concepts that are not the primary strand. If the Māori concept is not part of the foundation and just an add-on, it will not work well or achieve its primary purpose. In this case, the use of *Te Whare Tapa Whā* in non-Māori health services is not acceptable if misused according to this explanation.

Te Whare Tapa Whā was discussed in the interviews; first, to establish whether the participant was familiar with this model; second, to determine whether this model is important to the participant and their health journey; and third, to assess whether or how this was implemented in the GRx service they received.

> *I believe it is a great assessment tool that works well alongside other models…My background is actually in counselling, and that is one model*

> *that I use.* (Participant 6)

The same participant continues to say:

> *More and more Pākehā organizations are using it, but they are USING it, it is not the primary strand. It is an add-on, therefore as an add-on, it does not work well. It has to form part of the foundation rather than just a decoration.*

It was determined that *Te Whare Tapa Whā* is a valuable tool to use to help balance life within each realm of the model and to assist with each participant's overall health goals holistically.

> *Nothing was in balance, everything was chaotic, and Te Whare Tapa Whā would have helped me to meet my overall life goals.* (Participant 4)

> *For me, it creates a balance for so if I am getting my physical activity, my hinengaro is clear, I think better, I feel focused, so it is all intertwined for me. Physically, mentally, emotionally, and I am not such a grumpy mum as well, so in terms of my Whānau, it had its benefits as well.* (Participant 5)

It was easy to identify when *Te Whare Tapa Whā* was being used, even if it had not formally been discussed. It was just as easy to recognize when it was not being used in the service. The gaps in the service were noticeable when *Te Whare Tapa Whā* was not utilized. As an assessment tool it is well known to the participants and their belief in the model gave them confidence in the GRx Program when they identified it was being used.

> *I am familiar with Mason Durie, both personally as well as professionally, and enjoy his discussions and his arguments around Te Whare Tapa Whā very much…* (Participant 3)

Besides, Participant 3 added some very valuable insight from his perspective around the *Te Whare Tapa Whā* health model and discussions that were had with students and Sir Mason Durie himself. These insights included 'mauri (soul)', 'tapu (sacred)', 'mana (power)', 'ihi (essential force)', and 'wehi (fear)' into the model and discussed where they might fit:

> *On a personal level, I've talked with students, and I've talked with Mason about how there may be ways of filling in, not just talking about the four pou… the ridge pole of the whare which keeps the whare together … the roof … the walls… the doorway… the window, the insights at a conference where Mason was one of the key speakers on the healing of the spirit… he talked about a mauri … three or four years ago, I approached him [Mason*

> *Durie] about the mauri, and what his thoughts were on mauri.*
>
> *What is the mauri?*
> *So, it is when somebody stands up to give a talk, and they say tihei mauri ora, and I posit that the mauri is an essential spirit, the essence of being, there is no one English equivalent, so everything has a mauri.*
>
> *Both physical and non-physical manifestations have a mauri.*
>
> *What I am saying to you now the words have a mauri, and that mauri can be well. That is why we say mauri ora or can be ill and if a mauri is not well, you see it in the mauri of the river, it is polluted.*
>
> *It's mauri, the metaphysical being requires an attention and so that was my posit in that Whare Tapa Whā is very much a physical reflection on health but the health of the person, or of the being, or of the thing, doesn't just hinge on the physicality and I include emotional being as part of that physicality*
>
> *The mauri is the essence, and I posit it to Mason that you might think of it as the foundation of the whare or you might think of it as the roof of the whare, so the whare tapa Whā is not just about those four pou. There's a wholeness to the whare if you include matters like mauri, mana, tapu, ihi, and wehi, all of those aspects of the non-physical.* (Participant 3)

There is a fear that the government and other organizations attach a Māori philosophy to newly developed initiatives as a strategy to attract attention and popularity with Māori. The addition of the Māori component can be viewed on the surface of the effort, but without fully immersing the philosophy of the concept, it becomes susceptible to misappropriation and an act of disrespect. Māori terms and quotes also fit into this category when they are not used appropriately. This is not acceptable or tikanga Māori and is a cause for concern.

Non-Māori coordinators are not always aware of the needs of their participants from a cultural perspective or the Tikanga. From the interviews, it was mentioned that non-Māori coordinators could deliver a culturally enhanced service when they have obtained the appropriate cultural competencies and experience.

> *Met my needs culturally despite being a Pākehā.* (Participant 4)

Familiarity with Māori kai, Māoritanga, and taha Māori is essential knowledge to have when working with Māori. It needs coordinators to know what kai Māori eat, whether it

is traditional Māori kai at the marae, sharing a meal with Whānau, or whether it is kai according to an individual's or a Whānau budget.

Having this understanding allows the coordinator to offer advice and health strategies according to the individual needs of the participant. The nutritional information that was provided by the GRx coordinator was generally based on mainstream recipes and food groups suitable for the general population. There was seldom little flexibility in the catering needs based on personal household budgets and the size of the Whānau. Participants indicated they were unable to use the food recommendations made by their GRx coordinator due to these issues.

> *Need to be familiar with Māori kai… Māoritanga, taha Māori, Matauranga Māori, Kaupapa Māori.* (Participant 3)

> *I received information that was irrelevant and did not suit the family budget/ needs/specific circumstances.* (Participant 7)

Must know the kaupapa

As well as being aware of the kai that is relevant to the participant, it is essential to know other kaupapa around being Māori. The kaupapa needs to be acknowledged when being inserted. For example, Participant 1 commented:

> *Kaupapa Māori does not have to be the main concept, but it must be a significant part of the foundation.*

Participant 1 continued:

> *It was noticeable to me that I was the only Māori in the [standard] GRx group, but the other group was full of Māori, I respectfully suggest that I don't believe that the majority of Māori in that group would have known those terms (like mauri, mana, tapu, ihi, wehi) they just felt it and so they just gravitated towards [the kaupapa Māori facilitator].*

> *It is a concern with many of our Pākehā organizations or European-based philosophies, misappropriating indigenous philosophies and terminology. Therefore, those Māori bases are not successful because they are seen as add-ons rather than foundations in the matter.*

Kaupapa Māori is a way of life and a way of living for a lot of Māori. For example, beginning and ending a ceremony or gathering with karakia invites a spiritual presence that is called on for guidance and protection. It is used to increase the spiritual goodwill of a gathering to ensure the likelihood of a

favourable outcome. Māori welcome the use of tikanga and kaupapa Māori as a preferred way of doing things, as this is their way of life. Participant 5 commented, "*We live for our culture, and our culture helps us.*"

By adding a Māori dimension to health services, such as *Te Whare Tapa Whā* and tikanga practices, it has been suggested that other members of their Whānau will be more open to what the Program has to offer. Making it Māori friendly, by adding Māori cultural components into the service, promoting a robust tikanga Māori and matauranga Māori presence, the ability to improve health profiles for Māori will be more achievable.

Quite often, Māori finds they are the minority in many mainstream Programs. They regularly come face-to-face with Pākehātanga. The interviews raised the notion that when Māori can interact in a Māori influenced Program (e.g., an exercise group, a walking group, etc.) they could engage in the experience feeling accepted and comfortable. They expressed feeling more comfortable when they can speak the language and interact with each other in their way. They enjoy humour and have found it to be an excellent way to experience the Program, making it more memorable and enjoyable.

> *There was walking around the lake, talking, and interacting. Now and then he would throw a few Māori terms, Māori numbers. There would be this sort of humour…* (Participant 3)

As an example of the success mentioned when Māori are in a kaupapa Māori and tikanga Māori influenced environment, it is anecdotally believed that children who attend kaupapa Māori schools are more likely to participate in university.

> *Anecdotally I believe that if people send their children to kaupapa Māori schools they have a greater chance to go to university.* (Participant 3)

Interestingly, a tikanga and kaupapa Māori environment attract all sectors of society.

> *It is exciting that other people are attracted to it; it clearly caters for Māori. Other people [non- Māori] in that organization know the kaupapa, perhaps cannot verbalize it as well as others but they know it from their soul.* (Participant 3)

Conclusion

This section has provided the results of a thematically analysed qualitative research process. It has described the themes and sub-themes that emerged and provided supporting quotes from the interviews.

These participants need to have a good relationship with the person who is providing the

GRx services. This relationship would benefit from using whakawhanaungatanga and a pōwhiri processes. Having workplace and peer support has been advantageous for those participants that had this experience.

It was evident that not enough is known about the GRx service. Participants were unsure from the beginning about the GRx service. Some participants were misinformed due to the referrer also being confused about the service.

Some barriers and sacrifices were experienced during the GRx experience for the participants that were interviewed. The participants found that healthy food options were not as affordable as unhealthy food. They also found that talking about being unhealthy, unfit, and other personal issues can be very difficult without a good relationship with the GRx coordinator. Some participants were concerned about government services adding on Māori concepts to their kaupapa without the full understanding of that concept and the philosophy that goes with it.

Following, the discussion considers how these findings relate to the research questions of the study and how they align with the literature review.

Chapter 6 Discussion

6.1 Introduction

This study was designed to explore the experiences of Māori and the GRx public health service. Furthermore, it investigated the service and ways the service can be adapted to meet both the cultural and health needs of Māori. Several findings were identified that are consistent with existing academic literature. Suggestions and recommendations to improve the GRx service for Māori are discussed.

6.2 Relationships

For Māori, establishing good relationships is essential and a consistent finding within Māori health research. The most critical link for this study is the relationship between the GRx coordinator and the participant. For Māori, the act of whakawhanaungatanga and the pōwhiri process have both been identified as the most suitable method to create these relationships. Robson and Reid (2001) identified the components they believe define Māori identity and lead to relationship building for Māori (Robson & Reid, 2001). This process involves sharing their tipuna, their identity, their ancestral waka, a body of water, maunga, and a significant tupuna. (B Robson & P Reid, 2001). Once this is formed, they share a common bond (B Robson & P Reid, 2001). Also, whanaungatanga draws on all these components as a tool for creating, maintaining, and sustaining relationships.

Māori are aware that whanaungatanga and the pōwhiri process are not just for Māori to connect with non-Māori; it is equally important to use this process for Māori to connect with Māori.

> *There is that sussing out kind of period … if we suss each other out through the correct processes then it is just like alright yeah cool there it is. I think I would remain suspicious if someone Māori did not pursue that track.* (Participant 2)

Whanaungatanga and the pōwhiri process are both recommended for use in deciding if the GRx coordinator assigned to the patient is an acceptable match. Research participants assumed an integral component of the service was providing a suitably matched GRx coordinator. Finding the right coordinator will help them feel more secure, improve participation and lead to the overall success of beneficial health outcomes. This result also indicates that the GRx service offers a mechanism to properly align the participants with the coordinators. Interestingly, (Huriwai, Robertson, Armstrong, Kingi, & Huata (2001) found that matching client-counsellor care settings leads to increased patient responsiveness and relevance (Huriwai et al.,2001). This has meant, for Māori, greater use

and alignment of Māori concepts, values, attitudes, processes, and practices in care delivery (Huriwai et al., 2001).

Many Māori use Whānau concepts and whanaungatanga to boost their self-esteem, identity and establish vital structures of support for change (Huriwai et al., 2001). The purpose of whakawhanaungatanga is to create and sustain connexions, relationships, and obligations that help build therapeutic relationships and develop appropriate interventions. A correlation seems to exist between integrating a therapeutic approach with whanaungatanga and broad aspects of cultural identity for Māori's positive health outcomes. Huriwai et al. (2001), for example, pointed out how Whānau Ora practitioners formed close relations with other practitioners and organizations to work efficiently with Whānau. Similarly, collectives of Te Oranganui and Taranaki Ora both hired 'clinical navigators' to handle the interaction between the Whānau Ora team and the general practices several Whānau visited (Huriwai et al., 2001). These navigators have worked closely with clinical personnel to improve their expertise and understanding of Whānau goals (Huriwai et al., 2001). The actual whakawhanaungatanga mechanism and its connexion to treatment clinical components require further study.

The opportunity to experience the GRx in a culturally enhanced group setting appeared to have several benefits. All but one research participant received the GRx service as part of a kaupapa Māori directed group. This approach occurred as a workplace initiative within a Māori organization; pool sessions were led and inspired by a Māori instructor or an exercise group explicitly set up for Māori men. These approaches were all favourable to the participants' experience. The kaupapa components for each group used a variety of culturally appropriate interactions such as whanaungatanga, organic conversations, karakia, aspects of being on the marae, and the freedom to speak freely about subjects that mattered to the participants.

Two studies (i.e., Tava'e & Nosa, 2012; Warbrick et al., 2016) specifically identified how a social support approach was attributed to positive outcomes for their participants (Tava'e & Nosa, 2012; Warbrick et al., 2016). Tava'e and Nosa (2012) presented their findings for Pacific women who received a GRx and graduated from the service. Their participants advised that there were two main reasons for their positive experiences with the GRx Program: 1) the social context and 2) the friendly atmosphere created by peers and staff. Furthermore, the social aspect was the primary reason the women enjoyed and completed the Program (Tava'e & Nosa, 2012).

Warbrick et al. (2016) also found a clear sense of community and responsibility to be a key motivator for their cohort of Māori men; stressing the importance of people and

relationships (Warbrick et al., 2016). The authors also noted that the inclusion of relevant cultural values and motivators in Program design may improve the effectiveness of health initiatives, particularly in their study for the Māori men (Warbrick et al., 2016).

Social activity is known to have significant benefits that support and encourage and fitness and exercise regimes, which can lead to weight loss. There have been strong links between social interactions and an improvement in quality-of-life scores when working with Māori (Sukala et al., 2013). The concept of whanaungatanga is one explanation that relates to this and refers to participants' that have established a reciprocal relationship using whanaungatanga with each other and leads to the formation of a kaupapa Whānau (Hammerton et al., 2014). The whanaungatanga process provides transparency and can result in behaviour persistence among participants because they have the support of others and a shared willingness to help those others (Stoner et al., 2016). Whanaungatanga and manaakitanga (care and support), implicit in a group-based exercise program, is compatible with Māori tikanga (how things are done) and the practises of the participants (Stoner et al., 2016).

6.3 Barriers

Marrone (2007) suggests that an important part in understanding health disparities in indigenous people is the differences in access to and the use of health care among indigenous communities. Differences in health status continue to exist despite public health initiatives (Marrone, 2007). Besides the lack of relationship building, the established obstacles faced by the participants in this research were not able to afford nutritious food, the difficulty of talking about being overweight and unfit, and the personal problems addressed in these discussions. But the latter is an extension of the previous theme about establishing relationships and building trust with the provider. When this is well-established, such interactions are likely to be less difficult to have. Healthcare practitioners will not only increase patient satisfaction by interacting effectively with their patients, they will also increase their satisfaction at work. Knowledge of the communicative needs of each patient and knowing their expectations can inform health professionals to respond specifically to that individual's state of mind, thus significantly improving the communication process (Rotter & Hall, 2006).

Bishop et al. (2014) conducted research to help establish Programs that could minimize educational differences between Māori students and their non-Māori peers in New Zealand high schools (Bishop, L et al., 2014). Based on previous studies, it was found that teachers developing Whānau (extended family-like) relationships, and whanaungatanga, enabled Māori students to participate and succeed successfully in

school (Bishop et al., 2014). But this research found that whanaungatanga comes first when it comes to engagement (Bishop et al., 2014). Successful cultural pedagogies resolve power imbalances and prejudice by examining inequality and emancipatory approaches, and by fostering indigenous epistemologies by developing pedagogies where such information is central (Bishop et al.,2014). The whanaungatanga model draws culturally sensitive and sustained approaches together with large critical, socio-cultural learning approaches (Bishop et al., 2014). The classroom may therefore be regarded as a place where the processes of making sense of the young indigenous people are appropriate (Bishop et al., 2014). Such environments encourage participants to share their experiences and expand their knowledge through group interactions with others (Bishop et al., 2014). In this process, the instructor communicates and interacts with the students in a way that co-creates new information (Bishop et al., 2014). Such a classroom will bring in entirely different power structures, patterns of interaction and educational outcomes (Bishop et al., 2014). From the GRx service's point of view, these concepts can be tailored to encourage a power balance relationship between the GRx supervisor and the participant, while also establishing engagement patterns that lead to the participant's positive health outcomes.

6.4 Access to Healthy Food

In the sense of environmental sustainability, Barosh et al. (2014) reported that food security in cities at the international level is increasingly seen as a serious problem (Barosh et al., 2014). Pressure on changing landscapes and urbanisation continues to intensify issues related to the food supply, urban mobility, and affordable prices. In 1999, Tariana Turia, then Minister of Māori Affairs, gave a speech at the International Diabetes and Indigenous Peoples Conference in Christchurch (Turia, 2000). More than half of the world's population currently lives in cities and the growth rate in cities could double over the next few decades, which will have a significant effect on urban food security, public health, and the environment (Pistacchi, 2008). There are the scientific consensus that alternative and sustainable food systems may provide solutions to food shortages caused by environmental and social damage (Barosh et al., 2014). Food shortages have led businesses to kill the environment, but environmental degradation has been associated with food scarcity, climate change, and food prices and resources worldwide (Barosh et al., 2014). At the end of 2012, the hunger study published by the NSW Food Bank, contrasting the 2003-2009 estimates, found that Australian food costs rose by 24 percent (Barosh et al., 2014).

This information is a valuable guide for GRx coordinators to consider when promoting healthy food practices. Barosh et al. (2014) recommends a community-level intervention

that could be as simple as exploring the availability of healthy food sources within the community and promoting these sources to the participants (Barosh et al., 2014). Several community centres have already established healthy food sources for low- cost households, such as the Western Community Centre, which supports the Food Together initiative. The Western Community Centre provides the local community with a wide range of support services, programs, and activities from its facilities in Hamilton. "Food together" is an initiative committed to supporting local communities and families by making fresh produce available at affordable prices throughout New Zealand. Engagement in the community by the local GRx provider could provide a realistic healthy food source that can be utilized for Māori GRx participants from high deprivation households. Being aware of low-cost health initiatives in the community and access to healthy food sources can begin mitigating these barriers for many Māori families with this need.

Lanumata et al (2008) collected explored the experiences of low-income Māori and Pacific people with improving food security and physical activity (Lanumata et al., 2008). The researchers have noted that both Māori and Pacific communities have experienced changes in their traditional diet in modern New Zealand at a significant rate (Lanumata et al., 2008). Furthermore, it is important to consider the current context of New Zealand that factors in the role of supermarkets and fast food and advertising, which result in the consumption of unsafe food and food insecurity (Lanumata et al., 2008). Interventions are required in all settings including home, work, education, places of leisure, government, policies, etc. The types of interventions needed are physical, economic, political, and socio-economic (Lanumata et al., 2008). The researchers for this study set the challenge that policymakers and practitioners need to work with communities to ensure that they are supported to enhance their own lives in ways that are meaningful to them (Lanumata et al., 2008).

Talking about being unhealthy, unfit and the participant's circumstances are critical touchpoints in conversations. Such conversations have the potential to be resolved by using the already discussed kaupapa Māori concepts of whakawhanaungatanga and the pōwhiri process. The pōwhiri process helps to resolve the concern because of the steps involved in the process which signifies two groups coming together, negotiating the terms of their engagement, and finishing with the guests joining their hosts as one. Space and time where pōwhiri occur are determined by those who hold the knowledge and are tangata whenua (the original inhabitants of New Zealand). When engaging with Māori, the cautionary and familiar states in relationships with people and land are acknowledged (McClintock et al., 2012). It can be assumed that an indigenous approach is more

appropriate to Māori and can be established to increase the possibility of involvement. On protocols of respect, interaction with Māori and the collection of complete and reliable data are focused. The practice of consideration for the individual and the philosophy of not trampling on the authority of the individual increases the probability of a positive interaction outcome (Smith, 2003). Positive engagement is more likely to occur when it is conducted in a non-threatening environment chosen by the participants (Boynton et al., 1990). These processes and principles are most favourable for Māori and must be established early in the GRx coordinator and participant relationship (Smith, 2003).

Traditionally, Māori identities have been structured around genealogy. According to the view of the Māori world, all things (both living and non-living) come down from the Gods and can therefore be linked through genealogy (Walker, 1990). With their gods, mountains, rivers, streams, oceans, plants, lands, and human ancestors, Māori has established significant genealogical relations; and genealogy has influenced the development of social collectives and guided social connexions. (Walker, 1990). Māori cultures were changed by colonisation. To capture Māori capital, subvert Māori governments, and assimilate Māori to European cultural traditions, imperial weapons such as Christianity, native schooling, war, and imperial government laws have been used. (Walker, 1990). The legacy of these imperialist practices is the ethnic plurality of Māori (Walker, 1990). The degree to which Māori uphold 'conventional' values, beliefs, and practices vary widely between Māori individuals and groups (McIntosh, 2005).

Also, despite the initial implementation of the Meihana model for mental health services, it has a structure that promotes the convergence of therapeutic and cultural skills to support Māori while encouraging the incorporation of Whānau (Pitama et al., 2007). It is a model that is part of a Māori health system that validates Māori principles, values, and experiences in a clinical environment. (Pitama et al., 2007). However, the purpose of this model is to provide sufficient resources and professional development to allow clinicians to gain a better understanding of Māori attitudes, values, and experiences (Pitama et al., 2007). Further addressing this challenge and brainstorming ways to offer support and professional development to clinicians and other Programs and individuals working with Māori, such as the GRx project, may help to resolve these challenges and encourage the use of this cultural model of health evaluation more often for health services.

Similarly, in response to conventional primary health care not being able to address the needs of native communities and cultures, indigenous populations with poorer health outcomes are reported (Harfield et al., 2018). A systematic review by Harfield et al. (2018) aimed at defining the features of indigenous primary health systems (Harfield et al., 2018). The findings of 52 studies that met the inclusion criteria identified eight main

characteristics; of which, in seven, culture was the most prominent feature found. (Harfield et al., 2018).

There are many ways in which health facilities, such as GRx, can be improved to address the needs of Māori. For example, the Meihana model offers a culturally responsive clinical evaluation model and the eight essential characteristics listed in the Harfield et al. study (2018) above provides areas to be addressed while working with Māori. (Harfield et al., 2018; Pitama et al., 2007). The waka tino whakarawea model for assessing Programs and Programs for Māori learners was developed by Bevan-Brown (Bevan-Brown, 2011). According to the responses of the participants in that report, professionals should be well-trained, optimistic, and knowledgeable in their field to provide a culturally enhanced service under the concept of suitable staff (Bevan-Brown, 2011). They should have the skills required to interact with a wide variety of people effectively and sensitively, commit themselves to their work, be accountable, and have a positive, loving attitude towards the students, their parents, and Whānau. (Bevan-Brown, 2011). Cultural experts should consider the linguistic, cultural, and theological context of Māori, including reverence for and awareness of traditional values, ideas, beliefs, and practices (Bevan-Brown, 2011). They should also consider the consequences of this for the recognition and operation of learners, cross-cultural competence, and contribution to Tiriti o Waitangi, and awareness of the detrimental effects of colonization (Bevan-Brown, 2011). Bevan-Brown (2011) recognized that recruiting sufficient workers is not an easy task and that there is a shortage of people with both cultural and technical skills and a lack of resources to recruit them (Bevan-Brown, 2011). The lack of culturally appropriate and applicable preparation for workers in both conventional and Māori Programs and the high-stress level contributing to "burnout" were two additional issues found in the organization survey. (Bevan-Brown, 2011).

The bicultural study is a complex, multifaceted subject in the sense of the people ofNew Zealand, which focuses on the relationship between Māori and Pākehā. It brings together both indigenous and non-indigenous cultures' understandings and practices that foster the community's well-being (Eketone & Walker, 2015). It is critically concerned with being culturally aware and attentive (Eketone & Walker, 2015). Tolich (2002) spoke of "Pākehā paralysis," avoidance of Māori structures, worldviews, and practice models by Pākehā, and avoidance of Māori clients or participants in the study (Eketone & Walker, 2015). The concepts, origins, connexions, and practices of biculturalism that is important to social work and sociology were considered by Eketone and Walker (2015) (Eketone & Walker, 2015).

Morris and Alexander (2017) reference were made to culture becoming more popular in

New Zealand's formal conflict resolution system (Morris & Alexander, 2017). Furthermore, if culture is to be used in any system, it should be converted into successful practice otherwise there is a chance of tokenism that may be worse than not having cultural practice at all (Morris & Alexander, 2017). To overcome these challenges, the mediator must be sufficiently culturally aware, beginning with self-awareness and education (Morris & Alexander, 2017). There is a need for both individual mediators and professional organizations to pursue a more systematic approach to cultural training that will contribute to deeper understanding. (Morris & Alexander, 2017). In practice, mediators should adopt current mediation frameworks, use a diverse approach, and use various strategies to successfully integrate culture (Morris & Alexander, 2017). Mediators must be able to improve inclusiveness and stop tokenism (Morris & Alexander, 2017)

Eketone and Walker (2015) addressed the question of biculturalism in New Zealand, and Morris and Alexander (2017) discussed how, while culture is becoming more popular, difficulties remain in the effective use of cultural terms to prevent tokenism (Eketone & Walker, 2015; Morris & Alexander, 2017). It is my suggestion that more study is needed to explore how Māori principles and theories can be used correctly so that they are respectful of the concept/philosophy and Māori particularly if they are to be implemented in the delivery of a health services such as the GRx service.

6.5 Limitations

A larger cohort of participants would have provided more data, enabling an examination of a variety of approaches and strategies used by GRx providers nationwide. There was, however, the limitation of time as well as of cost. This is a small qualitative study situated in a defined area with insights from a few providers. Thus, findings are only relevant to this group. However, they demonstrate insights into Māori experiences of GRx.

6.6 Conclusion

The GRx service has proven to be a relatively low-cost public health strategy for the prevention and management of non-communicable disease and other health issues affected by lifestyle choice (Matheson et al., 2013). Disparities in health for Māori require such services to be able to successfully engage with Māori and understand how it can best meet the needs of Māori. This research supports previous academic findings in Māori health research such as the need for health services to develop meaningful relationships with Māori participants culturally, the inclusion of Māori models of health, and to view health and wellbeing holistically as Māori do. Additionally, this research found that when using Māori concepts and philosophies, it is essential that they are respectfully and appropriately used. This finding raises concerns that require further investigation. Poverty

and socioeconomic strategies are also needed to ensure that all New Zealanders have access to affordable, healthy food choices.

The primary purpose of the study was to collect the experiences of Māori with the GRx service. Participants were asked a range of questions about their overall experience with the GRx service, and the *Te Whare Tapa Whā* Māori health model that was developed by Sir Mason Durie and its suitability to their idea of a health model. A secondary aim was to explore ways that the GRx service could be culturally enhanced. Seven participants were interviewed, and these interviews were then transcribed and thematically analysed. Two main themes emerged. The first theme identified the importance of establishing a relationship with the GRx service and the GRx coordinator. The second theme identified barriers to the service for Māori.

Because there is little current literature around the experiences of Māori with the GRx health service, this study serves to fill a gap that investigates and provides context for these experiences. The aim is not to discredit the service; rather, to consider the experiences and suggestions from the current literature including the similar findings from Williams (2015), Williams (2017) and Pringle (2008) of the need for an alternative approach. By specifically targeting this population, I was able to provide insight that can positively impact future success for Māori participants with the GRx service.

The findings for this research provide information to strengthen the need for health services to include culturally appropriate ways to engage with Māori using tikanga Māori strategies such as whakawhanaungatanga and a pōwhiri process. These strategies aim to create an exchange of information that ensures a mutual understanding between the GRx coordinator and the GRx participant. It can be used to negotiate the terms of the working relationship and provide an opportunity where questions can be asked or answered. It is hoped that once such a relationship has been established, both parties will feel comfortable with each other to then move forward with a health strategy for the individual.

By developing and nurturing the relationship between the coordinator and the participant, the barriers and sacrifices raised in the second theme will be easier to address and may not even become an issue. It is equally important that if, after the relationship-building process, the GRx coordinator and/or the GRx participant decide that they are not a good fit for each other, accepting this decision and seeking a better fit better would be a wise move. The ability to do this would be encouraged both for the GRx service and other services where Māori are involved. This will help build the mana of the participant, the coordinators involved, and the service overall.

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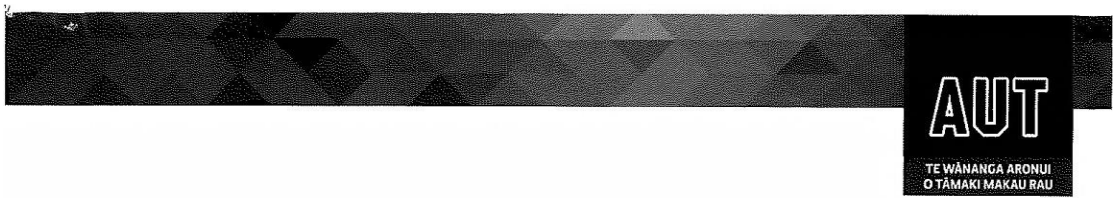
Appendices

Appendix A Participant Information sheet



Date Information Sheet Produced:

27 April 2016

Project Title

What are the experiences of standardand culturallyenhanced Green Prescription (GRx) services for GRx patients?

An Invitation

My name is Jewell Albert (Ngati Tuwharetoa, Ngati Maru descent) and I am a student at Auckland University of Technology. I am currently doing a Masters degree in Health Science and would like to invite you to participate in my research. Participation is voluntary and you can withdraw at any time.

What is the purpose of this research?

1. GRx is a major public funded program aimed at improving participation in and adherence to a physically active lifestyle.

Little is known about Maori thoughts and perspectives toward the program even though it targets an area of health that is very important for Maori. As a GRx coordinator myself, I worked with and observed Maori GRx patients and their response to the GRx program which inspired my interest in this topic.

How was I identified and why am I being invited to participate in this research?

You have been identified as being Maori and having received or are currently receiving a GRx. I approached Regional Sports Trusts and asked them to support the recruitment process by identifying and extending an invitation to yourself and others who fit the criteria.

What will happen in this research?

Participants will be invited to participate in a 60-90 minute focus group discussion (5-8 people) where I will ask about your experiences with the GRx service with the hope that the experiences and stories you share will bring to light your perspectives as a participant of the program. This session will be videotaped and then analysed using comparative analysis. Although you will obviously be known to others in the focus group if you choose to participate, any details regarding your identity will be kept confidential outside of the group (in reports, results, papers etc.). Transcripts of the discussion will be made available to you if you wish. Each participant will receive a copy of the findings once the study is completed.

What are the discomforts and risks?

It is possible that participants may experience some degree of nervousness or anxiety in a focus group setting. Following the principles of whanaungatanga and manaakitanga, we will do our best to reduce any undue discomfort experienced in the focus group setting.

How will these discomforts and risks be alleviated?

Any emotional upset will be responded to in private with the participant by the lead researcher. You are free to withdraw from the study at any stage without any disadvantage to yourself

What are the benefits?

Participants - provide a forum to share their experiences/have their voice heard ... allows them to contribute to improving the delivery of GRx, developing the most relevant initiatives for Maori etc.

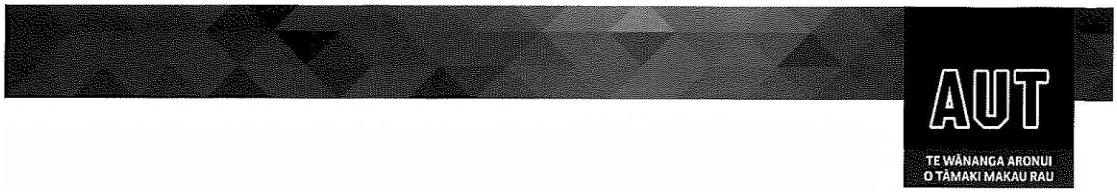
Researcher - complete a Masters in Health Science. Publish the essential findings of this research, and begin a career in the field of Maori health research.

Wider Community- Potentially receive a health services more suitable for Maori

How will my privacy be protected?

All data pertaining to individuals will be kept confidential. Only the lead researcher will have accessto information that will identify participants' data. All participant data will be stored and analysed using participant codes on Jewell's computer and hard drive.

Appendix B Informed Consent Form



Project title: "What are the experiences of standard and culturally enhanced Green Prescription (GRx) services for GRx coordinators and patients?"

Project Supervisor: *Dr Isaac Warbrick*

Researcher: *Jewell Albert*

O I have read and understood the information provided about this research project in the Information Sheet dated 6 June 2016.

O J have had an opportunity to ask questions and to have them answered.

O I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential.

O I understand that notes will be taken during the focus group and that it will also be video-taped and transcribed.

O f understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.

O If I withdraw, I understand that while it may not be possible to destroy all records of the focus group discussion of which I was part, the relevant information about myself including tapes and transcripts, or parts thereof, will not be used.

O I agree to take part in this research.

O I wish to receive a copy of the report from the research (please tick one): YesO NoO

Participant's signature:

Participant's name:

Participant's Contact Details (if appropriate):

Date:

Approved by the Auckland University of Technology Ethics Committee on 1 June 2016 AUTECReference number 16/192

Note: The Participant should retain a copy of this form approved by the Auckland University of Technology Ethics Committee on 1 June 2016 AUTECReference number 16/192

Note: The Participant should retain a copy of this form.

Appendix c Interview Questions

Interview Questions

How did you become involved with the GRx service?

How well did you understand the GRx service?

What was your understanding of a GRx going into the service?

What was your experience with the GRx service you received?

What were the main things you received from your GRx?

What were you expecting?

How important is a cultural approach for health services?

In your opinion how well do you think GRx works from a cultural perspective?

Are you familiar with the Te Whare Tapa Whā? How important is this health model top you?

Were the principles of Te Whare Tapa Whā incorporated into the service you received?

How could he GRx service you received have better used the principles of Te Whare Tapa Whā?