“A tikanga based approach to cardiac rehabilitation for participants in Aotearoa”

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Abstract

Iwi Māori (the indigenous people) of New Zealand (NZ) have a disproportionately high prevalence of cardiovascular disease (CVD) compared to their non-indigenous counterparts. NZ Māori are hospitalised 1.5 more times than non-indigenous New Zealanders for CVD. A recognised secondary prevention method for CVD, post-heart event such as acute coronary syndrome, is cardiac rehabilitation (CR).

This service offers opportunities for patients after a heart event to improve their quality of life, extend overall survival, return function, learn successful techniques to modify risk-factors and reduce the occurrence of further cardiac events. An audit of regional NZ CR services found that while 85% of Māori patients were referred to CR, only 37% took up (attended at least one session) and completed (attended at least four face to face sessions) outpatient phase two CR (Kira et al., 2016). Barriers to CR included; lack of recommendations by, and interaction with Health Professionals (HP), misconceptions about CR, difficulty and cost associated with transport, inconvenient timing of CR session, lack of perceived need, and understanding some or all of the information provided while in hospital.

The aim of this study sought to overcome these barriers to CR particularly for Māori. This was through the utilisation of a tikanga based approach in a mainstream CR programme to help increase the uptake and maintain retention. However, there was a no-show for Māori patients into the study, primarily because hospital referrals did not reach the primary health organisation (PHO). The study's gaze then shifted to interviewing non-Māori patients to gain their insights and experiences of the offering of the CR sessions with the tikanga approach. There was also the addition of interviewing relevant Kaupapa Māori CR (KMCR) services to understand their services and approaches on how they differ from mainstream CR services.

A Māori-centric qualitative study design was applied and semi-structured interviews were conducted with seven non-Māori participants of the CR programme and four kaupapa Māori CR services. The data collected was transcribed and analysed using an inductive tikanga thematic approach. The resulting themes demonstrated the acceptability of the tikanga-based approach for non-Māori. The study also found that the nature of clinical relationships had an impact on the service to Māori. The marginalisation of Māori in the healthcare system was evident along with the role communication had within the CR referral processes from hospital staff through to the programme itself.

Recommendations were highlighted that the need for cultural competency training, system changes, and improvements in the referral and communication processes were critical to such a programme. There is a need for continued research in this area, particularly exploring automated referrals and strategies in encouraging Māori to attend CR. Systemic issues in the health system including the impacts of colonial history and racism need to be addressed to reduce inequities and increase the uptake of CR.

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The above pepeha is a means of introducing myself as the researcher to this study. My whakapapa firmly grounds me within this research by identifying as Māori. It allows me to understand te ao Māori (the Māori world view) and mātauranga Māori (Māori knowledge) to be able to apply it to this research.

For me personally this topic was not something that I thought I would pursue for a thesis project. However, when it was proposed to me I thought it was an awesome opportunity to research such a niche topic with a lack of knowledge and information about it especially for our indigenous people, Māori. I have always been passionate about health and inequities for Māori thus, this research was very much suited to my interests. The component of exploring how a tikanga based approach could be utilised in a mainstream health programme also appealed to me with it being a newer concept.

With my current knowledge now on the topic of cardiac rehabilitation, inequities within this area of health need to be addressed so Māori patients can benefit from the underutilised service. I hope this research can offer some insight into how this can be achieved particularly for our Māori whānau.

Chapter 1: Introduction

Indigenous peoples worldwide often experience worse health status compared to non-indigenous people in their own nations (Curtis, 2023; World Health Organisation, 2023). This has been since the colonisation of many nations which oppressed and marginalised indigenous knowledge. This is evident in Aotearoa New Zealand (Aotearoa) with Māori experiencing much higher rates of health disparities compared to non-Māori (Came et al., 2021; Elers, 2014; Harwood, 2010). One of the leading causes of mortality globally is CVD, representing 32 percent in 2019 (an estimation of 17.9 million people), it is equally one of the most preventable causes of mortality (Miner-Williams, 2017; World Health Orginsation, 2021). It is also the leading cause of death within Aotearoa, accounting for approximately 10,000 deaths per annum (31.2 percent of all deaths) (Roxburgh et al., 2019). More than 1 in 23 adults are living with this disease (175,000 people) and almost 1 in 3 deaths are caused by CVD, with many being premature and preventable (Ministry of Health, 2019a; Ministry of Health, 2019b). CVD among Māori also shows a disproportionately high prevalence compared to their non-indigenous counterparts, similar to many indigenous populations worldwide (Bramley et al., 2004). Māori are hospitalised 1.5 more times than non-indigenous New Zealanders for CVD.

Internationally, it has been documented that there are many benefits to a secondary prevention programme such as P2CR for patients after a cardiac event. A secondary prevention programme like CR aims to reduce risk factors of recurrent cardiovascular events for patients (Liew et al., 2018). However, many barriers are encountered, impacting on the referral, uptake and completion of CR by a patient at risk. There are limited referral, enrolment and completion numbers in P2CR from patients after a cardiac event. This deprives significant populations of the benefits likely to accrue (Thompson & Clark, 2009). In Aotearoa (NZ), it is much the same. There is very limited research and knowledge about CR services particularly for Māori. This limited data is also evident in indigenous populations worldwide within this space. Research indicates indigenous people are at a much higher risk than non-indigenous, however, the general population also shows low levels of participation and attendance in CR (King & Teo, 1998). Broad secondary (hospital) care, of which CR is a subset, confirms there are inequalities throughout the entire health system.

Kira and Kira (2021) has undertaken one of the only studies to outline barriers encountered for Māori patients within CR. The study included interviews with 32 patients who identified as Māori and were referred to CR. Similar barriers were observed to international studies worldwide experienced for both indigenous and non-indigenous populations. This study went on to inform the intervention in this study to include mana-enhancing strategies. These strategies aimed to strengthen the enrolment and retention of patients who identify as Māori into CR. Principles of tikanga were applied as the underlying theoretical framework to develop the intervention with such strategies not being utilised before in any other study. The intervention aimed to focus on five principles of tikanga; whanaungatanga, manaakitanga, kotahitanga, mana and mārmatanga as guidelines for developing and implementing the study. The study included kai (food) at every CR session, free transport to every CR session and constant communication with CR staff. These all align with tikanga-based principles from Māori culture and it was presumed this may be of value for non-Māori. Collaborations with MidCentral District Health Board, Think Hauora and Te Tihi Whānau Ora were established to develop the intervention. This is to help improve health equity for Māori within CR.

The impact of covid was felt during this intervention and further complicated and increased inequities for Māori. CR staff secondments to COVID testing centres, rapid staff turnover and continued lockdowns severely affected all health services including the CR provision. COVID highlighted the many issues Māori faced within CR which were present prior to the impacts of covid. The CR service was delayed until consistent provision could be guaranteed. It is possible that COVID could have detrimentally affected the way Māori interacted with mainstream health services post-COVID.

It is also important to note recent changes to the NZ health system and the reforms that have been taking place over the last few years. This has been informed due to the failings of the health system for Māori identified through the Waitangi tribunal and claims. These claims recall negative experiences Māori have had with the system and how they can be changed to overcome inequalities for Māori. The new health system is known as Te Whatu Ora (Health NZ) and has weaved the 20 former DHBs into Three regional divisions and district offices (Te Whatu Ora, 2024). This system is now trying to rectify and change how services are provided for all New Zealanders. Te Aka Whai Ora (Māori Health Authority) was also established alongside Te Whatu Ora. It offers an iwi Māori voice and capability to drive the design and delivery of health services in Aotearoa, better meeting the needs of Māori (Te Aka Whai Ora, 2024). It aims for positive changes, including CR services, to allow for equitable recommendations to assist improvements in the health service. Systemic changes like this have been said to improve Māori wellbeing as the systems and those in positions of power in the past have not made the changes required for positive results (Lloyd, 2018). However, just before the hand in of this thesis it was announced that Te Aka Whai Ora will officially be disestablished by June 30 of this year by the current government. This is a major step back for Māori health and it will not offer the benefits it was set out to do in decreasing inequities for Māori alongside Te Whatu Ora. The disestablishment of this recent reform takes away the gains already made.

Overall, CR has shown good outcomes for participants who have attended. The current issue is not enough people attending and their reasons for it. Qualitative data states that reliable information about P2CR is not being passed onto patients by hospital staff. This data is not only Aotearoa but worldwide. Therefore, the following study, aims to assess how the tikanga based approach to P2CR has positively impacted on participants, particularly Māori. Interviews of participants will take place involving process evaluation questions, accessing acceptability which will inform recommendations for further research, policy and programme planning. The chapters of this thesis are outlined as follows; background to the study, literature review, methods, results, discussions and recommendations. These will be expanded on in much more detail throughout the thesis.

Background

Despite CR being a key priority recognised to reduce morbidity and mortality while increasing quality of life, most patients do not uptake this service. This is an issue not only within Aotearoa but internationally. One of the major problems of this in NZ and globally is the referral process which fails to align with specific groups within a population. This is specifically true for the indigenous people of NZ, Māori and other indigenous populations around the world who have even lower uptake to such a service as CR. This is seen as a major problem for Māori patients with cardiac issues who are eligible for CR. They are missed through the system, which in turn creates further inequities for Māori within this area, and therefore widens the gap further. Internationally, there have been studies undertaken that show the barriers to CR for patients both indigenous and non-indigenous. For Māori to overcome such barriers a Māori worldview needs to be adapted within CR programs.

Traditionally, Māori worldviews are a holistic and complementary system, rich in knowledge to understand the universe (Rangi, 2021). This body of knowledge originates from early ancestors and includes Māori worldviews and perspectives such as mātauranga (Moorfield, 2011). Mātauranga is the term most commonly used in describing Māori knowledge (Hikuroa, 2017). This is a unique way for the indigenous peoples of Aotearoa New Zealand to view the world enriched in traditional knowledge and culture. There were many ways of developing this knowledge and form narratives such as waiata (songs), pepeha (quotations), whakapapa (genealogies), maramataka (lunar calendar), tikanga (practices/values) and pūrākau (traditional stories) (Lee, 2008). By recognising this past history and knowledge of a Māori worldview it can be applied to a health context. It offers ways for Māori to improve their health and reduce inequities by understanding their culture, who they are and where they come from, promoting one's wellbeing. Thus, whakapapa is a principle that orders the universe, demonstrating interconnectivity between everything and a genealogical framework connecting creation of the universe to everything that exists within it via descent from ancestors (Salmond, 2012). Tikanga are concepts and values founded within a Māori worldview practised from generation to generation. According to Mead (2016) it might be described as Māori philosophy in practice and as a practical face of Māori knowledge, it essentially focuses on the correct way of doing something. Therefore, an intervention applying tikanga is an important framework that enhances Māori values and beliefs and incorporates cultural worldviews. Although tikanga is culturally based in te ao Māori, it promises to be beneficial for all cultures, because of its underlying driver to support the mana (respect) of all parties involved. This study offers tikanga approaches analysed with a Te Ao Māori lens to help encourage patients to attend and continue to attend Phase 2 cardiac rehabilitation. The intervention's aim is to overcome barriers that cardiac patients face when wanting to attend.

As stated previously, despite the benefits CR offers it is a grossly underutilised service. Thompson and Clark (2009) state that improving the access to and equity of CR is vital to the future of the service however, it also remains limited by under-funding and inflexible programmes. It is essential that these constraints are overcome to ensure those likely to benefit from CR do so, such as Māori and indigenous people. There is a need for more creative and dynamic approaches to achieve this for CR programmes. Thus, by using a tikanga based model to this intervention there is a hope it will create an approach to achieve an optimal programme for those in minorities in CR.

Research problem

Within Aotearoa, there is little knowledge if CR services offer the appropriate programmes as recommended by evidence based guidelines (Kira et al., 2016). This is particularly concerning considering the health benefits that CR provides cardiac patients, more so Māori who have higher risks of CVD. It is seen throughout the literature internationally that there is a need to change the face of CR particularly for those disadvantaged groups such as indigenous populations like Māori of Aotearoa. It is clear that the most pressing issues are based around CR referral, uptake and completion of CR after having a cardiac event. These are the major areas that need addressing for Māori with the lack of referral and enrolment into these programmes increasing disparities for them even further within cardiac health.

The study will argue that there is clear evidence that these systems and processes need to be reviewed and changed in order to increase attendance, particularly for those at higher risk such as Maori. Currently dysfunctional systems and processes are causing inequity in the services offered and more is needed to support these people and their whānau. The need to inform interventions to promote equity is essential.

Overall, the research problem can be seen in the disparities in health for Māori CR patients within this service. Enabling this population better access to and more aligned programmes for them will help to reduce these disparities for Māori and improve their overall health outcomes. It will avoid inequitable and unjust situations that are potentially detrimental to society and also be more cost effective. Māori rights as tangata whenua, as outlined in the Treaty of Waitangi, is an essential driver towards the goal of Māori having at least the same standard of health as non-Māori (Bramley et al., 2004).

Aims

This research aims to develop and test a programme that will recruit and retain a greater proportion of Māori patients referred to CR than previously found. It will explore the uptake and attendance of consenting participating patients into the intervention. Given the restraints of resources and constraints of the health system, all patients will be accepted into the study with a particular emphasis on Māori. There is no intent to change the original programme content of CR in this study.

There will also be an aim to include KMCR programmes to understand Māori stakeholder and workforce perspectives of referral and enrolment of Māori outpatients into CR. There will be an emphasis on whether KMCR are being supported with sufficient referrals from Pākehā-centric dominated hospital models.

Primarily the aim of the research is to see if a tikanga based framework is acceptable to improve the experience of P2CR in a mainstream health system. The retention and recruitment of participants into P2CR, particularly Māori are substandard in Aotearoa. Thus, if barriers of attending CR can be addressed in this study's intervention there may be a greater uptake and improved experience of P2CR. The intervention participants will demonstrate greater on average improvement in their understanding of healthier lifestyle choices to improve their heart health with the intervention providing:

- Food at every CR session
- Free transport to every CR session (if living within the PNCC boundary)
- Constant communication with CR staff
- Presence of Kaiwhakahaere

Tikanga

Within this study the principles of tikanga are being applied as the underlying theoretical framework to develop the intervention. However, the intervention (and framework) applies to all the participants Māori and non-Māori. There are several reasons for this:

1. Tikanga is a set of social guidelines and it varies from place to place, person to person. All ethnicities and cultures have a form of tikanga. Therefore, it is not culturally inappropriate to suggest this framework.
2. The focus is on general principles rather than being caught up in the detail of whether the intervention follows a specific iwi protocol. This is to encourage generalisability and transferability of the intervention.
3. Māori protocols are largely ignored at the secondary prevention level for the sake of time, efficiency, and because some policies are at odds with tikanga. However, in this case, P2CR staff have cultural competency training and the changes suggested do not conflict with any policy or procedure. Therefore, having a set of guidelines to follow that are Māori-friendly, but also welcoming to all clients is a positive step.
4. This intervention does not require new training for the current staff, therefore minimises the burden that is placed on them.
5. The high-level tikanga intervention style of this project means that it will not be obvious that there are Māori under-tones to the presentation of P2CR. This is purposeful in order to have non-Māori feel as though this programme is for them in accordance with the principles of tikanga.

As suggested earlier tikanga can vary between iwi and hapū, however the principles remain the same. For this study we will focus on five of the principles: whanaungatanga, manaakitanga, kotahitanga, mana and maramatanga as guidelines for the development and implementation of the intervention. These principles are considered to be critical for the intervention as they align very well with the themes drawn from the first phase of the study – Manawa ā mua. These principles will be discussed more specifically within the methods section of the thesis.

Research Design

This pilot is a quasi-experimental intervention design with qualitative outcomes. Quantitative P2CR data was not available for analysis during the post-pandemic period. Intervention group uptake and attendance will be explored amongst consenting participants referred to CR and more specifically Māori. Each CR programme is seven weeks in length and this study will observe 2 programmes (14 weeks consecutively) of the intervention.

The study population are consenting outpatients recommended (referred) or self-referred to CR. Midcentral District health board records estimate that approximately 2 patients per day are potentially eligible for referral to CR. This study is focussed on improving Māori outpatient attendance of CR, however in keeping with the tikanga principle of awhi (inclusion), patients of every ethnicity will be accepted to the study. It is important to note that the CR programme is conducted independently to the research and that the patients may participate in the CR programme without being enrolled in the research component.

Number of participants: 7 patients and 4 KMCR.
Main criteria for inclusion: Referred or self-referred to CR
Exclusion criteria: Not residing within Palmerston North City Council boundary

Research Significance

Heart disease prevalence is disproportionately high among the indigenous peoples of Australia, Torres Strait Islands and NZ compared to their non-indigenous counterparts (Bramley et al., 2004). NZ indigenous people (Māori), the prevalence of hospitalisation for cardiovascular disease (CVD) is 1.5 times higher than for non-Indigenous New Zealanders (Robson & Harris, 2007).

P2CR is a form of treatment that has good success in returning function and quality of life to patients after a heart event (Dalal et al., 2010; Lawler et al., 2011). Internationally it has been found that many people who have had CVD do not attend CR (Thompson & Clark, 2009). A recent audit, focusing on Māori CVD patients, found that while 85% of Māori patients were referred to CR, only 37% attended and completed (attending at least four face to face sessions) outpatient CR (Penney, 2012).

A systematic review identified a number of reasons for not attending CR, including lack of recommendations by, and interaction with, HPs (Health Professionals), misconceptions about CR, difficulty and cost associated with transport, and inconvenient timing of CR sessions (Neubeck et al., 2012). Recent studies have identified further barriers, including lack of perceived need, functional impairment (Clark et al., 2015), and lack of patient understanding of some or all of the information provided while in hospital (Hutchinson et al., 2015).

Despite the fact that international research has argued that mainstream CR does not meet the needs of some groups Clark et al. (2015), the systematic review (Neubeck et al., 2012) identified only one research study into barriers for indigenous people. Since the systematic review, only two more studies have been conducted into CR barriers with indigenous people. All three studies were only done on Australian indigenous people (DiGiacomo et al., 2010; Hayman et al., 2006; Taylor et al., 2010). One study conducted with health and allied HPs reported on the needs of HPs, including a lack of awareness of aboriginal people's needs, need for increased cultural awareness and facilitation by indigenous HPs (DiGiacomo et al., 2010). The other two studies report that, in addition to the general barriers, Australian Aboriginal CR patients felt out of place because of their younger age, negative public health messages, the absence of culturally-appropriate practices (Taylor et al., 2010), and a lack of indigenous HPs in CR (Hayman et al., 2006).

No study has been published that examined barriers to uptake and attendance for Māori CVD patients. However, a large survey has been conducted with 916 CVD patients, across all NZ ethnicities. In addition to barriers identified by previous international studies, they identified that lack of transport was one reason for low attendance of CR (Doolan-Noble et al., 2004), but the results were not analysed by ethnicity.

My supervisor and colleague undertook a study to identify barriers, facilitators, and potential solutions to improving uptake and attendance of CR among referred Māori patients. This included those who did not take up CR, attended some sessions but discontinued, or completed (Kira & Kira, 2021). This sole study of referred Māori patients was able to identify similar barriers and facilitators to meta-syntheses of the literature. In addition to these similarities there were cultural issues that the participants identified that reflected the Australian aboriginal CR patients such as younger age, the absence of culturally appropriate practices, and the paucity of Māori HPs. Furthermore, issues of tikanga (Māori code of conduct) were directly and indirectly referred to by the participants. The themes collated during the interviews were converted into a programme of strategies for CR recruitment and retention to be studied further.

The study showed that there were simple strategies that could be implemented to overcome primary barriers to accessing P2CR. Costly transport or lack of transport was a priority issue preventing participants attending P2CR. Therefore, provision of transport for every attendee and their supporters is a prerequisite for any CR programme. Food is a great ice-breaker at any event, and for CR. Providing food not only demonstrates welcoming hospitality but also enables an opportunity to highlight the many ways to eat a balanced and healthy meal.

Communication from the very first introduction was highlighted by Māori patients as being necessary. From the very beginning, the first contact was crucial and a number of the patients spoken to could not remember being approached about CR or knowing about CR. Although their records stated they had been contacted. There may be various reasons for these disparate views, one primary factor is that patients are not in an appropriate mental state to remember. One excellent suggestion from a patient was the use of posters in emergency and cardiac surgical wards. However, as stated previously, a one off communication is only one part of the communication puzzle.

Therefore, consistent communication that uses various communication modes is needed. Furthermore, the absence of Māori HPs in the CR space places Māori in a position where they do not feel free to express their culture although they may not be prevented from doing so.

Expressing one's culture allows the self to feel more relaxed and open to communicating and learning. Indeed Māori culture has been able to fully express the social structure and rules that govern social interaction into a set of guidelines called tikanga. There are kawa (protocols) within tikanga and each set of individuals have developed their own kawa. However, there are some general points of reference that are globally accepted which are defined as the principles of tikanga (Mead, 2016). It is proposed that health interventions that incorporate Māori values such as tikanga could help a programme like CR to improve uptake and retention of all patients referred to CR (Kira & Kira, 2021).

Scope of this study

In order to help outpatients recover from a heart event, CR is a programme that can involve education and structured exercise. However, less than 50% of patients referred to CR enrol in a rehabilitation course, according to research conducted internationally. CR programmes in Aotearoa are viewed as being less comprehensive, with fewer types and less health care staff, significantly lowering the quantity of CR per patient (Roxburgh et al., 2019). The recent study indicated that CR programmes in Aotearoa performed poorly compared to countries of similar income levels. Another reason for this is the potential barriers indicated and more specifically institutional racism and unfair health system policies. These contribute to minority populations' like Māori having below-average attendance rates. Thus, the scope of this study is very much warranted in terms of understanding Aotearoa’s CR programmes particularly in the referral and retention phases. If change can occur due to this pilot intervention being successful especially for Māori, it may reduce recurrence of CVD. More CR programmes can then be adapted with the added tikanga-based principles to align with Māori and non-Māori also benefiting from it too.

Furthermore, the opportunity arose to undertake such a study due to limited research within this area, particularly for Māori and the inequities of recruitment and attendance for Māori in the service. The scope of it has come from a previous study undertaken by Dr. Geoff Kira who undertook the first study in Aotearoa to look at the barriers and enablers to CR for Māori patients. That informed this intervention looking at better ways to increase recruitment and attendance of Māori patients into CR and try to close inequities gaps. This was the first study in Aotearoa to do so. The project will interview participants of the CR programme as well as stakeholders and workforce of Kaupapa Māori CR programmes around Aotearoa. This will identify areas of success and areas of improvement for CR as it pertains to Māori. Qualitative semi-structured interviews will be undertaken to understand the referral processes to CR and the workforce perspectives about how this affects provision of services and its impact on whānau who are referred. Data will be analysed using a tikanga framework based on the context of hauora and attracting enrolments. Results will be disseminated with participants and key stakeholders i.e. CSANZ (Cardiac Society of Australia and New Zealand), Ministry of Health (Manatū Hauora), Health NZ (Te Whatu Ora), and the Māori Health Authority (Te Aka Whai Ora). This work is part of a larger programme of research to develop the provision of CR to be accessible for all referrals of Māori patients.

Chapter 2: Literature Review

Introduction

The following literature review will critically examine the current body of knowledge within CR. With limited research on this topic within Aotearoa, particularly for the indigenous population (Māori), literature will be sourced from international studies too. The researcher will discuss the barriers and facilitators within mainstream CR as well as for indigenous populations, an insight into CR referral rates and enrolment rates and more specifically look at indigenous literature of CR with a discussion on recommendations that are believed to increase CR referral and attendance particularly for indigenous people. Strengths and weaknesses will be identified within this literature. The study will explore the gaps found to help contribute to and add to the body of knowledge for Māori to enable health inequity improvement.

Health Equities

Indigenous peoples worldwide often experience worse health status compared to non-indigenous in their own nations due to colonial health systems and policies imposed on them. Colonisation of these nations oppressed and marginalised indigenous knowledge, contributing to global patterns of health inequities between indigenous peoples (Came et al., 2021). This is evident in Aotearoa with Māori experiencing much higher rates of health disparities compared to non-Māori (Came et al., 2021; Elers, 2014; Harwood, 2010). There is a need for urgent action in addressing these health inequities for indigenous people which has been apparent for many generations. It is said that generic Pākehā-lead solutions have proven unsuccessful. The health system within Aotearoa is constructed of colonial infrastructure which has proven over the years ineffective in addressing systemic health inequities created by the processes of colonisation (Came et al., 2021).

Māori who seek access to healthcare services are said to frequently encounter disparities in the care provided. Statistics indicating that Māori are three times more likely in reporting instances of unfair treatment linked to their ethnicity (Ministry of Health, 2015). Furthermore, they are likely to confront instances of racism, encountering adverse events within healthcare settings (Wilson et al., 2019). Such events are avoidable complications that are due to improper actions by healthcare professionals or the absence of expected care. These occurrences then significantly impact indigenous peoples physical wellbeing, adding to the continued and avoidable inequities in health care services including CR. CR is a health area that experiences these health inequities for Māori particularly within the area of enrolment and retention.

CR is a form of treatment with positive success in returning function and quality of life to patients after hospitalisation. However, the system designed to reduce inequities is unfortunately failing NZ Māori within most health areas including CR. For example, an audit of a regional CR service found that while 85 percent of Māori patients were referred to CR, only 37 percent took it up (attended at least one session) and completed (attended at least four sessions) outpatient CR (Penney, 2012). Many policies and initiatives have been put in place to try and improve the inequities of all health areas for this population; however, the disparities are complex (Elers, 2014). Research has also found that Māori patients are more likely to experience discrimination in health care settings with these patients reluctant to ask questions and not complain even when observing a substandard of care. This illustrates clear obstacles confronting Māori when accessing health services many them feeling ill-informed and powerless as staff can be described as insensitive, judgemental, rude and disrespectful along with having poor communication (Elers, 2014). This is evident in CR settings as a lack of communication for Māori patients is seen as a significant barrier to their attendance rates which contributes to the health inequities.

The NZ government has claimed that health inequities between Māori and non-Māori have been a strategic priority for decades; however inequities have persisted since monitoring began in the 1950s (Came et al., 2021). Addressing these inequities evolved out of the government's obligations under Te Tiriti o Waitangi. This document between the British and Māori rangatira (chiefs) in 1840, endorsed tino rangatiratanga (Māori sovereignty), the protection of Māori taonga (which is treasured, including health) and outlined the terms of equitable citizenship (Came et al., 2021). However, these terms are currently not being pursued within health policy with the many Waitangi tribunal claims. This offers potential answers to help reduce inequities and pursue health equity for the Māori population. There is a need to decolonise health policy to better engage human rights declarations and Te Tiriti o Waitangi obligations in achieving health equity (Came et al., 2021).

Research has also found with indigenous peoples and an increased rate of chronic disease and injury, (like cardiac events) rehabilitation in health like CR needs particular attention. This is due to the health needs, demographic profile (ageing population) and most importantly the right to participate in and receive quality health care (Harwood, 2010). Inequities between Māori and non-Māori in rehabilitation outcomes and areas verify that a ‘one size fits all’ approach is not working. There are issues in accuracy of data, available information and evidence suggesting health needs of indigenous peoples are not being met currently with inequities only increasing with increased rates of chronic conditions (such as strokes) (Harwood, 2010).

Thus, research has shown that less than half of eligible patients were invited to CR programs. Studies have shown how hospital selection processes can unfairly influence patients' opportunities to benefit from evidence-based health care programs (Williams et al., 2010). Certain vulnerable groups are less likely to be referred, and hence participate in CR; these groups include women, the elderly, ethnocultural minorities, patients of low socioeconomic status, and with comorbidities (Turk-Adawi et al., 2014). These inequities suggest vulnerable groups such as Māori in Aotearoa have less access to CR than the average patient. Therefore, by restricting access for some population sub-groups at the margins like Māori, it increases health inequalities and inequities within this service by limiting their opportunity to gain access.

The inequities are not only seen within CR but also cardiovascular disease in NZ. Socioeconomic disparities within this area are becoming wider and as a result cardiovascular disease is increasingly associated with disadvantages to vulnerable groups (Doolan-Noble et al., 2004). There is significant undertreatment of high risk patients such as Māori with major disparities shown in CVD data between NZ indigenous peoples (Hutchinson et al., 2015). Therefore, the need for cardiovascular intervention and better CR is essential to better Māori inequalities within this health area given the higher prevalence of risk factors and higher incidence of disease within this population.

Overall, further research is needed in gaining more information on the inequalities Māori are facing within the CR space and how to overcome these to improve the support and care of this population. Came et al. (2021) states there is a need to support and trust Māori knowledge and insights into the complex challenges of health inequities in Aotearoa society. It has been suggested that qualitative methods have the potential to illuminate underlying factors influencing disparities in CR uptake and inform interventions promoting equity with the issues of low-attending individuals to these programs (Angus et al., 2015; Sun et al., 2017). Solutions to narrowing the gap between Māori and non-Māori inequalities to health is not solely relying on mainstream health institutions in meeting the health needs of Māori but offering culturally connected health ideology (Hutchinson et al., 2015). Came and McCreanor (2015) also states if health inequities are to be eliminated in the health sector of Aotearoa it is vital that the policy offers a clear direction of what works best for Māori. It is clear that where Māori evidence does not exist, a plan needs to be put in place providing funding to develop such evidence. This is the case for CR for Māori in Aotearoa today.

Heart disease

Globally, CVD is the leading cause of death, representing 32 percent in 2019 (an estimation of 17.9 million people). It is equally one of the most preventable causes of mortality too (Miner-Williams, 2017; World Health Orginsation, 2021). It is also the leading cause of death within Aotearoa, accounting for approximately 10,000 deaths per annum (31.2 percent of all deaths) (Roxburgh et al., 2019). More than 1 in 23 adults are living with this disease (170,000 people) and almost 1 in 3 deaths are caused by CVD, with many being premature and preventable (Ministry of Health, 2019a; Ministry of Health, 2019b). It has often been thought that CVD is a male issue. However, twice as many women in Aotearoa die of heart disease, more than any other single cause. This was over 3,000 women in 2017 (Ministry of Health, 2019a). Māori (the indigenous people) of Aotearoa also have a disproportionately high prevalence of CVD compared to their non-indigenous counterparts, similar to many indigenous populations worldwide (Bramley et al., 2004). Māori are hospitalised 1.5 more times than non-indigenous NZers for CVD, with it also the leading cause of premature deaths in Aotearoa. Compared to non-Māori, Māori have a death rate from CVD that is more than twice as high (Heart Foundation, 2018; Ministry of Health, 2015; Ministry of Health, 2018). Thus, the inequity these figures convey for Māori is troubling within Aotearoa.

The disparities in these health outcomes have been documented for many years, however progress toward reducing them has been alarmingly slow (Bramley et al., 2004). These inequities could potentially be reduced if more Māori are provided the right information and access to CR. Current research states it is able to help improve heart health outcomes that would benefit Māori in the long-term which in turn reduces these figures and increasing life expectancy of Māori (Bramley et al., 2004; Hutchinson et al., 2015). The NZ Health Strategy outlines CVD as a priority in their population objectives and CR is identified as a key strategy to reduce numbers (Hutchinson et al., 2015). However, Māori are found to be underrepresented at hospital-based CR although greatly over represented in CVD statistics, suggesting the priority placed on CVD and CR within the NZ Health Strategy is inadequate (Hutchinson et al., 2015). Findings suggest that CR needs to be more culturally related and offered through different venues relevant to Māori such as marae settings, with personal approaches said to be better applied with CR programmes being more in line with national guidelines. The role of nurses and their interaction with Māori is also very important in improving Māori health by eliminating and exposing prejudice, while advocating equity of health care for Māori (Hutchinson et al., 2015).

Cardiac Rehabilitation

CR is a recognised secondary prevention method. This service offers the opportunity for patients after a heart event to improve quality of life, extend overall survival, return function, learn successful techniques to modify risk-factors (enhancing secondary prevention) and reduce the occurrence of further cardiac events (King & Teo, 1998). Neubeck et al. (2012) also defines it as a secondary prevention programme that is a multifactorial behavioural intervention delivered after an acute cardiac event, aiming to reduce cardiovascular risk factors while improving patient quality of life. It is not solely directed at enhancing recovery after a primary cardiac event but offers many other beneficial benefits. Liew (2018) states it has evolved into a healthy heart programme. The aim is to empower patients, whānau and health carers to work in partnership to improving all modifiable risk factors, reducing the risk of recurrent cardiovascular events.

It is a co-ordinated sum of interventions that involves the use of physical, psychological and social aspects to achieve successful outcomes for patients (New Zealand Guidelines Group, 2002). It has been documented that comprehensive CR programmes have shown to reduce mortality from coronary heart disease, re-infarction rates and hospital admissions. In total, randomised controlled trials have shown a 25% reduction in mortality (New Zealand Guidelines Group, 2002). This shows strong evidence that all patients after a heart event should be referred to a CR programme to gain the relevant benefits it has to offer. However, in spite of these documented benefits, CR continues to be an underutilised intervention for not only the general population but also at-risk populations such as Māori.

CR is delivered in three phases; phase I - inpatient rehabilitation, phase II - outpatient rehabilitation and phase III - long term maintenance of the skills and behaviour changes learnt from phase I and II. Current comprehensive CR programmes are multifaceted which involve the following components; empowering patients to make lifelong changes, exercise programmes, nutrition management, weight management, smoking cessation, managing psychosocial aspects of life, coping with the disease process, pharmacotherapy and ongoing personal follow-up and support to help improve both physiological and psychosocial status of cardiac patients (King & Teo, 1998; Kira et al., 2016; New Zealand Guidelines Group, 2002). In NZ the CR guidelines mainly focus on phase II. There are a variety of different programmes tailored to this phase such as home-based (widens access and participation), community-based (group support and encouragement), hospital-based and centre-based (often individuals) which need to be tailored to meet individual needs of patients and their whānau. However, the equity of these programmes and services particularly for disadvantaged groups such as Māori is challenging. The programmes can vary in many different ways within different areas that may not offer the best opportunities for the disadvantaged groups who are more vulnerable to cardiac events (like Maori). Particularly referral and enrolment processes that are widely seen as dysfunctional for many to engage in these programmes. Thus, the need to find the right strategies to overcome these issues within CR programmes is needed. Much of the literature focuses on the potential benefits of CR in middle-aged men. However, those in underrepresented categories in much of the CR research such as women, elderly and indigenous populations (Māori) can also benefit from these programs immensely (King & Teo, 1998). CR programmes within NZ are found to see a median of 270 patients per annum, offering a median of 2 sessions per week, for 8 weeks; the median programme dose was 16 hours in NZ, much lower than other high-income countries (Roxburgh et al., 2019).

Barriers and facilitators of CR

CR is recommended for all patients after an acute cardiac event or surgery; however, many barriers are faced for some patients in receiving this service. There has only been one study undertaken in Aotearoa to understand these barriers and facilitators of both enrolment and attendance in CR for Māori. The study provided in-depth interviews of Māori CVD patients referred to CR from the central region of NZ. Most of the barriers were similar to other international studies for both indigenous and non-indigenous populations.

Reasons against uptake or attendance of CR included lack of perceived need, did not fit them individually or was not relevant, did not like groups, did not receive or understand information about CR and practical problems, such as needing to work or lack of transport (Kira & Kira, 2021). The factor of being a lot younger than other clients at CR either stopped them from taking up CR or they discontinued going. There were few direct instances of racism reported but concerns were outlined about the lack of importance of Māori needs and lack of Māori Health Professionals in CR (Kira & Kira, 2021). Another study within NZ looking at the delivery of CR to determine if NZ services are as equitable as other high income countries (HICs) identified similar barriers to the above. These barriers were also similar to other HICs.

The greatest barrier to CR delivery was lack of financial and human resources; this lack of financial support may be affecting the ability to deliver CR according to national and international guidelines (Roxburgh et al., 2019). Other barriers included access to transportation and other multi-disciplinary staff/services (i.e. specialists, dietitians and psychologists) (Roxburgh et al., 2019). These barriers were also found internationally in many other studies, with many being for the general population. A systematic review identified a number of reasons for not attending CR, including lack of recommendations by, and interaction with, Health Professionals, misconceptions about CR, difficulty and cost associated with transport and inconvenient timing of CR sessions (Neubeck et al., 2012). Further studies also identified barriers that included lack of perceived need, functional impairment, work schedules, social commitments, affordability, acceptability and lack of patient understanding of some or all of the information provided while in hospital (Clark et al., 2014; Clark et al., 2015; Hutchinson et al., 2015). These barriers outline significant challenges for CVD patients in access and cost to CR services.

The barriers of affordability and acceptability are crucial for the minority and disadvantaged groups such as Australian Aboriginal and Torres Strait Islanders people as these populations are those most in need of this secondary prevention service (Clark et al., 2014; Clark et al., 2015). Another study also stated that reasons why many patients do not receive CR are varied. Their studies included distance, transportation issues, lack of convenience, lack of referral by physicians, lack of funds, illness, lack of interest, denial of severity of illness, believing it would not work, along with them thinking CR is not suitable for them and their family (Thompson & Clark, 2009). Similar findings were identified by Field et al. (2018) with five main themes influencing CR attendance; referral, health services pathways and planning; cultural and geographic factors necessitating alternative and flexible programs; professional roles and influence; knowing, valuing and psychosocial factors; and financial costs (personal and health services). It is interesting to note that the above barriers outlined were also identified a number of years ago indicating they still have not been addressed in the correct way. Two studies stated the same barriers for patients into CR services that are still seen today. They identified employment status, physical/mental disability, living alone, lack of access to transport, not receiving a written invitation, English was not their first language, convenience (distance, availability), women, elderly people, people living in rural areas, responsibilities at home (child care) and financial burdens (accommodation, parking fees) (Doolan-Noble et al., 2004; King & Teo, 1998). Along with these barriers, facilitators were also identified in some studies.

A study found that emotions surrounding a CVD diagnosis encouraged people to attend CR, as they focussed on their survival; physical enablers were available in other languages, availability of home programs (flexible); system and service enablers were physician recommendation, good interaction with healthcare providers, information given at appropriate time during inpatient stay and understanding purpose of CR; personal enablers were believing the benefits to CR, peer support from attending CR and able to change their own CVD risk (Neubeck et al., 2012). Another study found facilitators for patients to attend CR were perceived benefits of exercise (positive experiences, leading to enjoyment of participation); patients who had a sense of control and support around transportation; social networks and benefits enabled ongoing participation due to seeing participants in the same boat as them allowing for increased confidence, having shared experiences and mutual support; and lastly programme components involving having knowledgeable and encouraging programme staff that helped sustain access to CR (Clark et al., 2013).

CR referral rates

WHO recommends all patients with CVD should be routinely referred to appropriate CR programmes based on the evidence they offer both short-term and long-term benefits to health and well-being (Hayman et al., 2006). However, many studies have found that there is a failure to refer eligible patients to CR both internationally and nationally resulting in major access barriers to CR. One study found that this barrier impacts participation levels widely with referral rates varying from 10-60 percent (Hamilton et al., 2016). Positive factors said to influence referral are identified as being a younger age, male, Pākehā, positive attitudes to CR by referring physicians or HP and patients undergoing percutaneous intervention or coronary artery bypass grafting.

Internationally it is said only 33 to 50 percent of all patients referred to CR take up that referral (Thompson & Clark, 2009). The referral and participation rates have been found to be a challenge and a lot lower for the elderly, women, ethnic minorities and those of lower socioeconomic status (Balady et al., 2011; Doolan-Noble et al., 2004). In regards to these particular groups less likely to be referred or participate in CR is especially notable due to women and minorities significantly more likely to die within 5 years after a first MI (heart attack) compared to white male patients (Balady et al., 2011). It is suggested this can be explained by the strength of physician endorsement of CR and failure of in-hospital healthcare teams to refer eligible patients to CR. Hospital based interventions promoting automatic referral for eligible patients show significant impacts on referral rates (Balady et al., 2011). It would be logical to think an increase in referral rates of patients eligible would increase the participation levels of CR, however; many who are referred do not enrol into programmes. One study found that only 34 percent of those referred actually enrolled in CR with many who enrolled not completing the full course of CR (generally 36 sessions in 12 weeks) (Balady et al., 2011).

Recently, an audit focusing on Māori CVD patients in Aotearoa, found that while 85 percent of Māori patients were referred to CR, only 37 percent attended and completed (defined as attending at least four sessions) outpatient CR (Penney, 2012). As a result, there is a need in NZ for significant improvement in referral to, uptake of and completion of CR programmes. Improving the referral processes, to promote the benefits of CR for certain groups (such as Māori) will offer more effective ways of delivering the service to those most in need of it (Doolan-Noble et al., 2004). This study also outlined an audit of a CR centre which showed that over 25 percent of patients admitted to coronary care units or high dependency wards were not referred to CR and 56 percent of all eligible patients did not attend the programme. Another NZ study that also looked at referral rates to CR saw a total of 143 questionnaires received with a response rate of 36.3 percent; 12 percent were Māori, 86 percent NZ European and 2 percent other ethnicities (Hutchinson et al., 2015). Within these responses only 38 (n=54) percent attended CR, nine (53 percent) of the 17 Māori respondents attended CR, with just under a third of respondents (30 percent, n=43) receiving no information on how to contact the CR coordinator after discharge. Of those only four (9 percent) attended CR. However, it was found that more than 50 percent of those who did receive information did attend CR after discharge (Hutchinson et al., 2015). Moreover, not all respondents were invited to CR; 39 percent (n=56) said no or did not know about receiving an invitation with only three then going on to attend CR. The CR coordinator provided most of the invitations (38 percent). Therefore, from these results NZ referral rates are extremely low and the amount of Māori is just as low in terms of identifying as Māori within the survey and also being referred.

Within Australia and NZ, the 12 month mortality rate of 10 percent after discharge from a cardiac event has not changed in 20 years (Clark et al., 2014). The study indicated there is limited data on if access is a significant factor of non-attendance to CR programmes however; the EuroAspire study of CVD management reported only 45 percent of patients discharged from hospital after acute CVD documented evidence of referral to CR. Only 34 percent had evidence of participation in CR programmes (Clark et al., 2014). The recommendation from international guidelines suggests NZ CR programmes should start within one month of hospital discharge. With every one-day increase in wait time, patients are 1 percent less likely to enrol and the likelihood of improving fitness-related measures is reduced by 1 percent (Roxburgh et al., 2019).

A study in Australia also estimated that only 30 percent of people hospitalised with heart disease are referred to CR (Field et al., 2018). The study concluded that the impact on increased CR uptake to an international standard of 65 percent would offer an estimated net financial saving of A$86.7 million per annum. A further study undertaken in Australia identified where CR program coordinators received patient referrals from; regional public hospitals (50 percent), metropolitan public hospitals (60 percent), regional private hospitals (35 percent), GP (60 percent), aboriginal medical services (50 percent) and self-referrals (40 percent) (Hamilton et al., 2016). The most common method of referral was a referral letter or a copy of the discharge letter. Other methods included telephone calls, facsimile, internal eReferral and email. Overall, the study’s findings showed varied referral rates and were greater for urban services than rural, remote services. The majority of rural services received less than five indigenous and non-indigenous cardiac referrals per month, some less than 5 per year (Hamilton et al., 2016). Another study in Aotearoa saw 46 CR units approached, with 36 responding to a survey to understand the source of patient referral. Hospitals referred the most (94 percent) followed by; medical teams (86 percent), ward nurses (86 percent), CR nurses (86 percent), GP (81 percent), self-referred (67 percent), practice nurses (67 percent), community based nurses (15 percent), physiotherapists (12 percent), other sources (10 percent), psychologists (5 percent) (Kira et al., 2016). Paper or electronic referrals (92 percent) were the most accepted referral of patients with telephone referrals least accepted (61 percent). Another study by Hutchinson et al. (2015) stated there is no direct interaction with patients while they are in a hospital environment outside of personal communications with the CR coordinators who work there. After being discharged, patients get a call with an invitation. According to this data, most patients learn about CR after being discharged. More needs to be done to educate HPs on the value of outpatient CR; ideally, more people should be inviting those in need to CR than just the CR coordinator. The nursing staff only sent out invitations to 34 patients (19%). Most patient interactions occur between members of the nursing staff, and it seems that few of them are talking to patients about CR programmes.

Furthermore, another Australian study outlined females having 40 percent lower odds of being invited to CR compared to males, and married patients having 30 percent higher odds of being invited compared to non-married patients (Williams et al., 2010). It also stated patients whose preferred language was English had three times the odds of being invited compared to those whose English was not their first language. More advantaged patients were said to have approximately 30 percent lower odds of being invited, compared with disadvantaged patients, with indigenous status not included within the study’s results due to very few patients filling in this field (Williams et al., 2010). However, this result of disadvantaged patients more likely to be invited to CR does not align with other literature within this area. The study stated overall that Australian and international studies have reported CR referral rates of less than 50 percent amongst eligible populations (Williams et al., 2010). This aligns with many other studies amongst the literature.

CR participation rates

The amount of patients who enrol and participate in CR after referral, along with completion rates can vary due to many factors. Completion rates differ both internationally and in Aotearoa due to different definitions for this and the different variety of CR available e.g. home-based, individual, community or completing online. There is no standard for CR. By studying patients who inconsistently attended or dropped out of CR programmes (rather than patients who were never referred to or chose not to enrol in programmes) factors predicting limited attendance can be identified (King & Teo, 1998). It is understood only a small proportion of the general population who experience cardiac events actually attend CR programmes (Hayman et al., 2006). However, little is understood about patients' decisions to participate, with complex factors and processes influencing these participation levels. One study found that even after referral, 20-70 percent of eligible patients did not go on to participate in programmes fully with only a proportion of sessions offered to them (Clark et al., 2013). A European survey on CR confirmed that less than half of eligible patients attended CR and fewer than 50 percent of patients attend worldwide. Those patients who are at higher risk are least likely to attend and the majority of patients not completing the program (Clark et al., 2014; Neubeck et al., 2012; Stewart, 2016). It is argued that the uptake of CR from one country to another varies significantly (Thompson & Clark, 2009).

Studies have found participation in CR programs have consistently contributed positively to patients' physical or psychosocial well-being (King & Teo, 1998). However, 40-60 percent of participants in CR programs stop attending regularly within the first 6-12 months. It is suggested that self-motivation, self-efficacy and a patient's social support networks are critical determinants of attendance to CR and staying in the program (King & Teo, 1998). If patients are self-motivated and have self-efficacious beliefs, attendance at CR and health outcomes will be positively influenced. This is particularly true for Māori as knowing who they are and having that belief in themselves and connection is a huge benefit to them and their health and taking control. Thus, the use of tikanga in an intervention like ours can promote this. A study suggested that completion of CR programmes was determined by attendance at four or more sessions during the 12 week period from the date of hospital discharge (Doolan-Noble et al., 2004). These predictors of poor participation were also found by Neubeck et al. (2012) including distance from CR, language other than English, lower socioeconomic status, ethnicity, female gender and older age. Attending previous CR programmes were predictors of undertaking CR, with age and being from middle deprivation quintiles determinants of non-completion (Doolan-Noble et al., 2004). Low attendance rates are also contributed by the poor understanding of the concepts and benefits of CR. The lack of knowledge and negative perceptions need to be addressed (Field et al., 2018). These low participation rates also represent failures in healthcare services (HP and systems of care), with patient-related barriers to attendance, participation or adherence despite being referred (Hamilton et al., 2016). The Australian study by Hamilton et al. (2016) stated available data showed a wide range of program completion for patients who commenced CR; a range of 30-100 percent overall with CR completion of 30-100 percent in rural, 10-90 percent in remote and 65-90 percent in metropolitan services.

Even with the positive evidence shown for CR and as a secondary prevention, referral is suboptimal and participation rates around the world including Australia, the USA and Europe estimated to be as low as 10-30 percent (Clark et al., 2014; Clark et al., 2015). Within the USA, participation rates of men were typically limited to 25-31 percent of eligible patients, and the participation rate of eligible women being much lower at 11-20 percent. Clark et al. (2014) state there is a mismatch between access and attendance of CR as they found the majority of Australians had excellent geographic access to the services after discharge, however it did not seem to translate to attending. Within the USA a study found patients should not only be referred and attend CR programmes but also participate as regularly as possible. The study found out of 31,000 patients aged 65 and over those who participated regularly (36 sessions) had 12 percent lower risk of MI and a 14 percent lower risk of death than those who attended 24 sessions; a 23 lower risk of MI and a 22 percent lower risk of death than those who attended 12 sessions; and a 31 percent lower risk of MI and 47 percent lower risk of death than those who attended one session (Clark et al., 2013).

A study in NZ found it had the best density of CR globally showing there is one CR position for every two incident ischaemic heart disease cases/year (fourth best capacity globally) (Roxburgh et al., 2019). However, there is very low patient uptake rates and it was suggested geography was a critical factor to this. CR programmes in NZ have tried to address this barrier with it suggesting roughly 60 percent of CR programmes offer alternative settings. Another study in NZ found only 5 people attending CR were invited by a cardiologist (Hutchinson et al., 2015). This however does not support evidence of other research suggesting the best person to refer patients is the physician as they are more trusted and the expert.

Indigenous people in CR, including Māori

Māori are the tangata whenua (indigenous people) of Aotearoa and should have equal rights and opportunities to CR services. The burden of CVD falls disproportionately on Māori therefore, it is essential they receive timely, high quality and culturally appropriate CR services (New Zealand Guidelines Group, 2002). However, like other areas within the health sector they face a variety of barriers which continue to produce inequities to the service for them. Very few international studies have investigated barriers and/or facilitators to CR uptake and/or attendance for indigenous peoples including Māori. Therefore, this is an indication there is a need to improve access and understanding of CR services for these populations.

Despite the fact that international research has argued that mainstream CR does not meet the need of some groups, a systematic review identified only one research study into barriers for indigenous people (Clark et al., 2013; Clark et al., 2015; Neubeck et al., 2012). Since the systematic review, only two more studies have been conducted into CR barriers with indigenous people. All three studies related to barriers for CR for Australian indigenous people only (DiGiacomo et al., 2010; Hayman et al., 2006; Taylor et al., 2010). One study conducted with HPs and allied HPs reported on the needs of HPs, including a lack of awareness of aboriginal people's needs, and the need for increased cultural awareness and facilitation by indigenous HPs (DiGiacomo et al., 2010). The other two studies report that, in addition to the general barriers, Australian Aboriginal CR patients felt out of place because of their younger age, negative public health messages, the absence of culturally-appropriate practices, and a lack of indigenous HPs in CR (Hayman et al., 2006; Taylor et al., 2010). There have recently been two more studies related to CR for Australian indigenous people. The first study found similar findings to the previous ones above, with lack of referral and enrolment to CR, with drive times of over 60 minutes (geographical location) significant determinants of access for this population (Hamilton et al., 2016). The study goes on to state that to improve access to CR and meet cultural needs of indigenous people, they must first be identified as Indigenous. It was found that fewer than half (47.7 percent) of CR services had processes in place to even identify indigenous status (Hamilton et al., 2016). Thus, the under-representation of Indigenous Australians participating in CR, as reported in other literature and this study, requires a collaborative effort to improve services to better meet the needs of indigenous patients with CVD as a way of closing the gap in life expectancy (Hamilton et al., 2016).

Cultural skills of general population staff also need improving as it is important to the process. Clark et al. (2015) indicates that patient education pamphlets for indigenous populations need to be adapted and that hospital interactions with cardiac patients need to be culturally acceptable. There is a need to provide adequate and effective CR, increased involvement, together with non-indigenous people improving cultural awareness, mutual trust and two way learning, improving support and access (Field et al., 2018). This was similar to what Clark et al. (2015) stated too; cultural awareness of health workers, putting effective discharge plans in place before patients leave hospital and language, culturally appropriate resources proved. This study stated Australian Indigenous experiences of barriers of CR are similar to that of the general population, compounded by cultural issues, lower socioeconomic and education levels as well as greater geographic isolation (Field et al., 2018). However, Australian

Indigenous peoples have a greater need for CR, both primary and secondary prevention due to higher levels of CVD which is similar to that of Māori people in Aotearoa. It was stated there's a need for improving models of referral and access, with increased education and involvement of indigenous people including indigenous HPs taking the lead in their own people’s care (Field et al., 2018). This was also a key finding in the study Clark et al. (2015) where there was an observed need to engage indigenous cardiac patients using indigenous HP in hospital. Many of the issues these populations face are not well investigated and described with much more research needed.

Previously no study had been published that examined barriers to uptake and attendance for Māori CVD patients into CR. However, a large survey in 2015 was conducted with 916 CVD patients, across all NZ ethnicities informing and understanding best practice. Furthermore, recently the first study in NZ was undertaken to identify barriers, facilitators, and potential solutions to improving uptake and attendance of CR among referred Māori patients. This included those who did not take up CR, attended some sessions but discontinued, or completed (Kira & Kira, 2021). This sole study of referred Māori patients was able to identify similar barriers and facilitators to meta-syntheses of the literature. In addition to these similarities there were cultural issues that the participants identified that reflected the Australian aboriginal studies and CR patients such as younger age, the absence of culturally appropriate practices, and the paucity of Māori HPs (Kira & Kira, 2021). Furthermore, issues of tikanga (Māori code of conduct) were directly and indirectly referred to by the participants. The themes collated during the interviews were translated into a programme of strategies for CR recruitment and retention to be studied further.

Overall, the diversity between cardiac patients in background, social circumstances, economic status, ethnicity, culture, health literacy, health behaviours and psychological wellbeing and the cardiac event had, it is not surprising standard approaches to CR do not suit everyone. Of concern is that attendance is most often lowest in the groups with highest risk of adverse outcomes, including Māori, pacific peoples, other ethnic minorities, and individuals with greater socio-economic disadvantage (Stewart, 2016). There is a need for flexibility in CR approaches that also need to be culturally appropriate to these populations. Many studies within this space do not focus on CR attendance or uptake in indigenous populations. Therefore, it is an important area that needs addressing globally and warrants future investigation (Roxburgh et al., 2019). It is understood that Māori seek to exercise tino rangatiratanga (self-determination) by active participation in and controlling the provision of health services for Māori (New Zealand Guidelines Group, 2002). It is said developing Māori provider CR programmes will reduce access barriers, improving the effectiveness of these services for Māori and whānau. However, mainstream service providers need to offer ways of increasing their own responsiveness to meeting unmet Māori needs in their CR units (New Zealand Guidelines Group, 2002). This is outlined as creating a CR environment that is open, respectful, supportive and empowering, that acknowledges the needs of Māori with communication and involvement with whānau crucial at all stages of CR. Lloyd (2018) goes on to state accelerating Māori health is not only good for Māori but also for NZ, improving outcomes for Pākehā does not also improve outcomes for Māori however, the reverse is true. The improvement of Māori health will have a flow on effect throughout the NZ economy however, achieving this requires systemic changes, as if Māori wellbeing stays low it is due to these systems and those people in positions of power not making the changes required for positive outcomes (Lloyd, 2018). This is true for CR programmes and Māori too.

Current Recommendations

Indigenous and Māori

With the many barriers perceived by patients with CVD, whether indigenous or non-indigenous, studies have recommended solutions to overcome these that are practical and simple. For Māori patients specifically, such improvements to CR could increase their attendance allowing for the inequality gap to close in this area faced by Māori. A study undertaken in NZ by Kira and Kira (2021) states that it is more widely accepted that different service models of CR are needed such as home-based, case management approaches, nurse coordinated prevention programmes and telephone based programmes. They indicated that a greater variety and flexibility in CR programme design could improve enrolment and attendance for indigenous and non-indigenous patients in NZ. Offering CR outside work hours and in locations easily accessible, providing transport, having different formats such as; groups, individual versus online, or, indigenous or European dominant-focus allowing CR to appeal to a larger group of patients (Kira & Kira, 2021). Increasing cultural focus such as employing a Māori support person, enabling rapport building and ensuring information has been understood is recommended (Kira & Kira, 2021).

Another study in NZ found that CR programmes offered had fewer sessions and elements compared to other HICs, with inequities existing across NZ programmes (Roxburgh et al., 2019). It is suggested by this study more investment is needed to ensure NZ CR meets other international countries to identify strengths and disparities of care to inform future CR delivery. The study also outlines, like others, technological advancement and utilisation of mobile technology as a strategy that can promote patient uptake in the NZ context in the future (Roxburgh et al., 2019). An additional NZ study also states recommendations to improve CR attendance rates include; all patients receive an invitation, patients identified from non-cardiac wards should be offered heart health information, discussion and considerations given to older women and Māori to encourage attendance, offer more culturally inclusive CR programs and finally like many studies, establish an automatic electronic referral tool for all eligible patients (Hutchinson et al., 2015). This offers 100 percent referral rates which increases and improves CR attendance (as patients will know about it) as international research has proven.

With global trends of CVD burden and mortality increasing, global availability of CR is very low (only 38.8 percent of countries have CR programs). One major implication of attendance to CR is the issue of referrals both in Aotearoa and globally. Research has recommended the need for automated referral mechanisms for rehab programmes (King & Teo, 1998; Neubeck et al., 2012; Thompson & Clark, 2009). This was also found in another study by Doolan-Noble et al. (2004) who summarised considerable scope for improvement in referral to, uptake of and completion of CR programmes in NZ. Improving the referral process, promotion, provision, delivery and monitoring of CR services were critical to recommendations. This paper however, is seventeen years old and for this to be known that many years ago to still be a major issue today indicates the system is still broken and needs major reform. Furthermore, research internationally has indicated addressing patients' perceived needs to improve attendance at CR is necessary.

Developing motivation and self-efficacy to attend existing programmes rather than developing more programmes offers a more economical solution to uptake (Clark et al., 2014). Like many other studies, this research also outlines that if patients do not attend CR then perhaps the programmes need to come to them in a home-based, mobile telephone or internet format to improve CR access (Clark et al., 2014). Various studies including WHO describe the inadequate availability of CR globally. Coordinated efforts at both national and international levels to overcome these challenges are needed. Reformed policies (to increase CR capacity), expanding research, developing funding mechanisms to address barriers, increasing health human resources, expanding and decentralising service delivery, increasing the use and affordability of technology, alternative models of CR delivery to increase reach and health system approaches to increase CR demand (Turk-Adawi et al., 2014).

The addressing of CR barriers can be a challenging process. No single solution can be applied due to diversity within populations, the need to find approaches suitable to remote, rural and urban areas, the need to consider cultural issues and staff availability (Hayman et al., 2006; Neubeck et al., 2012). Solutions need to be flexible, responsive to the needs of patients and delivered in a variety of settings and modes (Hayman et al., 2006; Neubeck et al., 2012). It is suggested multidisciplinary methods are required that can adapt to the available skills in each setting to support system changes. Balady et al. (2011) states that healthcare policies are a critical part in the solution to the gap in delivery of CR with the support of alternative CR delivery models needed. Using opportunities offered by healthcare reform to make CR affordable and increase accountability of healthcare providers and systems is essential. A recommendation for CR among indigenous populations to increase uptake outlines the need for specifically tailored cultural beliefs. These include cultural awareness training for non-indigenous staff, involving indigenous health workers and family members in CR, engaging with community elders and incorporating CR into existing community-based programmes (Neubeck et al., 2012).

A recommendation for indigenous healthcare systems and then for CR programmes is to adopt a method called the hui process and the meihana model. The purpose of these educational resources is to convert the concepts of cultural competency into a method that practitioners may apply to enhance their current clinical procedures and increase their ability to respond to Maori patients and their families (Pitama et al., 2017). Therefore, this could enhance CR programmes and enable indigenous populations to be more inclined to attend. The hui process modifies the hui's framework to accommodate clinical communication. The four parts of the hui process correspond to te ao Māori engagement strategies and explain how they relate to clinical encounters. The four elements are: kaupapa (attending to the objective of the encounter); whakawhanaungatanga (creating a connection/building relationships); poroaki/whakamutunga (closing the session) and mihimihi (initial greeting engagement) (Pitama et al., 2017). The meihana model then builds on earlier work of Mason Durie's te whare tapa wha model. It gives users of the model a clear common language offering definitions unique to this model. The meanings of the Māori language phrases used in other contexts and situations are not fully covered by these definitions. There are four distinct components to the meihana model. The waka hourua (double-hulled canoe) recognises the importance of client/whānau relationships and the relevance to presenting challenges and future treatment plans. It offers reminders for clinician to work alongside client/whānau in the decision making of their health by exploring dimensions of tinana (physical body), hinengaro (emotional), ratonga hauora (access to quality health services), wairua (connectedness) and taiao (physical environments) (Pitama et al., 2017). Lastly, Nga Hau e wha (representing the four winds of tawhirimatea) represents both historical and current societal influences on Māori as the indigenous peoples of NZ. The four influential and interrelated winds are; colonisation, racism, migration and marginalisation. Therefore, this strategy could be utilised in CR to better accommodate Māori to overcome some of the challenges and barriers they face to attending.

Overall, it is down to the patients whether they want to enrol and attend CR. It is dependent on factors such as self-motivation, self-efficacy and social supports that need to be taken into account by programmes when considering an increase in the uptake of CR.

Chapter 3: Methods

Introduction

The aim of this study was to develop and test a programme that will help improve recruitment and retention of Māori patients referred into CR by using a tikanga based approach. It will investigate the change in uptake and attendance of consenting participating patients of the intervention along with an aim towards Kaupapa Māori CR programmes in understanding Māori stakeholder and workforce perspectives of referral and enrolment of Māori outpatients into CR.

This chapter outlines the research actions that will take place to implement and conduct a qualitative Māori-centred study design using semi-structured interviews and standard thematic analysis. The researcher will discuss more in detail; the research design that will be used; the selection settings; the components of the intervention being undertaken; the understanding of tikanga within the study; participant recruitment; how data will be collected, measured and analysed; ethical considerations and dissemination of findings.

Research Design

This research is a qualitative quasi-experimental Māori-centred pilot study. The research took place over a 14-week period which were split into two 7-week P2CR programmes. There was one day session each week which ran from 1pm-3pm, every Tuesday. The intervention for the study commenced on 09 November, 2021 and concluded on 22 March, 2022. The completion time was much longer than anticipated due to the impacts of the covid pandemic and restrictions imposed on the country and health sector. Ethics approval (SOA 18/79) has been obtained to conduct this work for the intervention as well as a separate ethics submission by the student for the KMCR (ethics notification number: 4000026808).

The focus of this research is emphasised on Māori however, given the restraints of resources all patients were accepted into the study therefore, the design cannot be a full Kaupapa Māori approach thus, a Māori-centric. There is no intention of changing the original programme of CR in the study. The intervention itself has an underlying tikanga based framework where whanaungatanga, manaakitanga, kotahitanga, mana and maramatanga were applied. With the use of this framework the study endeavoured to help recruit and retain a greater proportion of Māori participants. With a primary aim to see if this framework was acceptable to improve the attendance to P2CR in a mainstream health system. A secondary aim that includes Kaupapa Māori CR unit staff and understanding Māori stakeholder and workforce perspectives of referral and enrolment of Māori outpatients into CR.

The intervention for this work includes employing a Kaiwhakahaere (KWH) from Te Tihi to enable the tikanga aspects of the intervention and offer efficient communication to potential participants. For the transport aspect the original plan was to collect participants in a bus to unite them as a form of kotahitanga. However, a bus option proved difficult, due to logistics e.g. taking longer to collect clients. Thus, a taxi chit option was decided upon as it met the criteria to enable a decrease in inequities for those who could not drive or have a form of transport to the CR programme. Food will also be provided every session over the 14-week period. The KWH will work with CR and hospital staff to deliver CR session information and keep the outpatients updated throughout the intervention period. On conclusion of the two 7-week interventions the researcher will undertake 8-10 semi-structured interviews of outpatients from the programme over phone or zoom. The interviewer will also aim to interview at least 4 Kaupapa Māori CR programmes to understand the comparisons of Kaupapa Māori CR programmes compared to the intervention that is Māori-centric but in a Pākehā-centric domain. The results found will be analysed using inductive standard thematic analysis methods.

Research Method

Tikanga

In this study the principles of tikanga are being applied as the underlying theoretical framework to develop the intervention. Qualitative data will be collected via acceptability interviews from the participants and their whānau. The information detailed in this section relates to the underlying framework that informs the development of the intervention.

This intervention (and framework) applies to all the participants of CR. The recruitment of patients are within the Palmerston North region, which begs the question why have a Māori culture base, that is, tikanga based, intervention for all ethnicities? There are several reasons for this:

1. Tikanga is a set of social guidelines and it varies from place to place, person to person. All ethnicities and cultures have a form of tikanga. Therefore, it is not culturally inappropriate to suggest this framework.
2. There is a focus on the more general principles rather than being caught up in the detail of whether the intervention follows a specific iwi protocol. This is to encourage generalisability and transferability of the intervention.
3. Māori protocols are largely ignored at the secondary prevention level for the sake of time, efficiency, and because some policies are at odds with tikanga. However, in this case, CR staff have cultural competency training and the changes suggested are not in conflict with any policy or procedure. Therefore, having a set of guidelines to follow that are Māori-friendly, but also welcoming to all clients is a positive step.

4. This intervention does not require new training for the current staff, therefore minimises the burden that is placed on them.
5. The high-level tikanga intervention style of this project means that it will not be obvious that there are Māori under-tones to the presentation of CR. This is purposeful in order to have non-Māori feel as though this programme is for them in accordance with the principles of tikanga (see below).
6. Tikanga can vary between iwi and hapū however, the principles remain the same. For this study the focus will be on five of the principles: whanaungatanga, manaakitanga, kotahitanga, mana and maramatanga as guidelines for the development and implementation of the intervention. These principles are considered to be critical for the intervention as they align very well with the themes drawn from the first phase of the study – Manawa ā mua.

Whanaungatanga

Whanaungatanga literally means 'acting as family'. In this context, it is more widely accepted as relationship-building. Within a Māori worldview there is a need to establish a relationship with the person that you are interacting with, whether it be at work, in health, or in business or in leisure. To establish a relationship means that both (or all) parties have an understanding on how everyone will work together, establishing the expectations, and the agendas that motivate each party. Without this knowledge, Māori (in general) find it difficult to ascertain how they should behave in certain situations. For example, as Māori a common default setting in a clinical context is to be demure and acquiesce, but this is not what is required in that environment. Clinicians have an expectation of two-way communication, however in the Māori world that cannot happen without first setting the parameters of how that relationship is to be conducted. There needs to be an exchange of commonality, hence the mihimihi (introductions) denoting who you are. For Māori it is important to know where you are from, to whom are you related, what your values are, what qualities do you most highly regard?

In the context of CR, the first contact is most important. Because the setting is not ideal, one party is ill and recovering, it may take several attempts before true whanaungatanga is established. The patient may have a mistrust of the hospital or medical system, therefore it is imperative that the CR staff personalise the contact.

There should be an exchange, particularly of personal information, that signals a desire from the CR staff member that they want to know the patient and that the patient's presence is welcomed and celebrated. For example, the simple act of acknowledging where a person is from and that the staff member has some relationship with that region or person such as a family member. Maintaining contact after a relationship has been established is imperative, if the most is to be gained from the relationship. This is also important for tracking a patient after they have attended CR.

Manaakitanga

Everyone welcomes hospitality. This takes various forms in many cultures, however common elements are the provision of food to welcome visitors. In Māoridom, it is compulsory to have food provided at any event, large or small, formal or informal. For example, many of the interviews that informed this intervention were held in participants' homes. Several times the interviewer (Dr G Kira) was invited to share a meal with the participant and their whānau. One interview took place over a four hour period where one hour was the actual interview time and the balance was sharing korero (conversation) over dinner. One whānau called the interviewer after the interview had finished to apologise for not offering a meal, but then cooked a large meal for a follow-up visit even though he was physically disabled and living simply.

Thus, this principle of manaakitanga is taken seriously by Māori whether poor or wealthy, fluent in te reo Māori me ona tikanga (Māori language and conduct) or not. In this intervention, food will be provided at every session. To ensure that the CR programme is as welcoming as possible with free transport provided to every session via taxi chits to ensure timely transport to and from the venue.

Kotahitanga

The Māori term kotahitanga means a togetherness, emphasising the concept of unity and working together in achieving common goals - a state of being as one. Traditionally, CR is a group therapy programme. That is, a small group (approx. 1:5 staff to patient ratio) is taken through multiple (6-12) education sessions and sometimes exercise. People from diverse backgrounds and ages spending time together is a difficult process to facilitate sharing of personal information and encouraging behaviour change. Unity or oneness with others in the group is assisted by social interaction and processes that encourage coming together.

In this intervention transport is one way of encouraging group unity. Free transport was offered to each session of CR. It was originally hoped to provide a bus to collect participants so they would be able to engage with one another before the programme however, logistically this did not work so transport was then offered via taxi chits. Kai could also offer kotahitanga by coming together and having korero (discussion) around kai while at the CR programme. This could prime the kotahitanga aspect of the programme and promote greater participation in the group rehabilitation sessions.

Mana

Mana refers to authority, respect, and self-esteem depending on the context. In the context of CR, mana refers to the respect given to the client and the self-esteem that instils. Mana is encouraged through whanaungatanga and manaakitanga, but it is confirmed in the process of respecting the choices of the client. If the client thinks they are better served doing something a certain way then that should be respected.

Within CR then the client should be treated in such a way that they are not made to feel the CR staff are doing them a favour by providing the service. Everyone deals with a heart condition in their own way, and the process by which someone is encouraged to participate in CR should be just as flexible. For example, some people may require more social support through group therapy sharing sessions then others. While others may like to participate in their own solo exercise sessions to make themselves feel empowered. By encouraging these personalised ways of coping with heart disease, participation in CR is promoted and patient self-confidence flourishes creating mana within themselves.

Māramatanga

Māramatanga refers to enlightenment and is preferred any day to pōuritanga (darkness) (Mead, 2016). For research in a Māori sense it seeks to expand knowledge outwards (te whānuitanga), in depth (te hōhonutanga) and towards light (te māramatanga). Thus, researchers are expected to go to considerable lengths on a research topic and thereby gain worthwhile results which is often described as ‘taonga’, that is, as a work of value (Mead, 2016).

Within CR this is an important aspect for Māori participants and staff (and non-Māori). By doing something different like the tikanga based approach to this study it adds to the value of achieving enlightenment, that everyone wins (Māori and non-Māori). Tikanga in the study is offering guidelines on how to treat others with respect, with that respect in turn reciprocated.

Selection Setting

The setting of this intervention took place at the Primary Health Organisation (PHO) Think Hauora. They are the PHO for the MidCentral Community. They run a CR programme within their organisation for the MidCentral Community and are referred patients for CR from Wellington Hospital, Palmerston Hospital, self-referral and also other PHO’s within the region. It was the chosen site for the study due to the previous research undertaken within this region informing the intervention. There were trusted relationships with the researcher's supervisor (Dr. Geoff Kira) and the organisation, therefore used as the setting for this study.

In order to get patients into the study setting they are likely contacted by their GP (long-term nurse) after their hospital referral for a cardiac event. Think Hauora is emailed the referral on the patients discharge to then enrol them in CR. The patient will then attend CR for secondary prevention.

Intervention

Based upon the literature and the previous study that informed this intervention, it is proposed that the tikanga based study approach will include the following components:

- Transport (kāta)
- Kai (food)
- Kaiwhakahaere (Maori support worker)
- Whitiwhiti (communication)

Transport (Kāta):

Poor access to, or absence of, transport is a primary barrier to uptake or attending CR which has been identified in literature devoted to CR uptake. However, to our knowledge no study (of CR) has included a transport intervention to facilitate uptake and attendance. The transport for this study was originally planned to be provided by common services such as diabetes support, or community or Māori health services. Private transport agencies were to be utilised only on a casual basis with transport being from the door (or other agreed place) of the participant to the CR location and return. However, due to logistics the transport option went from a bus being provided to pick up participants to them being offered taxi chits where and when they were needed. This transport option will still involve and accept the whānau or support person(s) of the participant. There was the hope that CR staff would be encouraged to travel on the transport as often as possible along with the Kaiwhakahaere however, this was not feasible with the option changing to taxi chits.

Kai (Food):

A catering company will be contracted to provide sufficient kai to demonstrate manaakitanga (hospitality) and types of food that are promoted for a healthy heart. A PHO nutritionist will oversee the quality and diversity of kai. This kai is available for participants, their support person(s), and staff.

Kaiwhakahaere (Advocate):

A Māori community health or social services worker will be employed part-time on a short term contract to provide support services in concert with the CR staff. The Kaiwhakahaere role is to maintain communication with all study participants and have a focus on ensuring the support of Māori participants. Communication will occur primarily over the phone, but also at CR sessions and during home visits. They will have an important role in the first meeting with potential participants to ensure that the tikanga values of the study are followed. Importantly their skillset will reside in their ability to support participants with knowledge of social services and navigation of the health system as a reference point. A journal will be kept of the weekly tasks and observations (14 weeks) of the Kaiwhakahaere experiences of the recruitment and retention process of the intervention. This journal will supplement the key stakeholder and patient interviews and be anonymised to protect the identity of staff and participants.

Communication (Whitiwhiti):

Communication is a key element drawn from the literature and the initial study. Communication will be expected from the CR staff with the number of communication exchanges attempted to be monitored over the duration of the study. This will predominantly be related to the medical issues pertaining to CR. The KWH will be responsible for all study-related communication such as recruitment and retention. Communication will use a multitude of channels including but not exclusive to phone, email, social media, and face-to-face.

Overall to summarise the intervention, the study will employ a KWH from Te Tihi to enable the tikanga aspects of the intervention to be upheld correctly (as discussed above). Transport will be offered via taxi chits to pick up outpatients and their support person(s), free of charge, to deliver to and from CR. Food will be provided every session over the 14-week period (two 7-week programmes). The KWH will work with CR and hospital staff to deliver CR session information and keep the outpatients updated and engaged throughout the intervention period. The researcher will obtain information from the KWH and CR nurses via email to set research and intervention processes, identify issues and collect anonymised data. The programme consisted of experts coming in to speak at each session on topics to help improve patients' knowledge and understanding of their heart conditions, helping to prevent it happening again. Experts such as physiotherapists, exercise specialists, nutritionists, pharmacists and many more were present (one per session). Before every session participants would get their blood pressure, temperatures and heart tracked to monitor any changes over the 7-week course (this data was not collected for this study). An exercise physiologist would also run a 20 minute exercise session every week to support clients in warming up their bodies and get moving. The staff would explain what the exercises were so clients had an understanding on what and why they were doing them.

Participants

Potential participants were sourced predominantly from the referrals of outpatients from the cardiology department at Midcentral District Health Board Palmerston North hospital. In addition to the hospital referrals a small number of patients will be considered from GP practices and nurses, and self-referrals.

KMCR were sourced from the heart foundation directory website, where CR services are listed. The four services that participated had the opportunity through their consent forms to be named. Three out of the four services chose to be named in the study (those services are named in the acknowledgements of this paper). Taking this opportunity to be named provides mana and credibility to their contribution. It also allows their whānau, hapū and iwi to be represented and shared in recognition of their contribution to the study.

It has been estimated that a total of 338 people had cardiac events in the Midcentral DHB region in a 158 day period during 2015 (Department of Quality and Health Intelligence, Midcentral DHB). This is equivalent to 2.1 people per day or 104 people per CR programme (7 weeks) or 314 people over the entire intervention period. This does not include the small number of GP or self-referrals. These are the figures that should be coming into CR within this region.

The expectation of gaining 100% uptake is not achievable, and a proportion of patients will not meet the inclusion criteria of living within the Manawatū. However, this study with a greater exposure for P2CR should be achieving a 20% uptake at least. The aim would be 50% of potential referrals per course (n=52) and a proportional increase in Māori participants. This is the greatest number of patients that have attended the Palmerston North P2CR programme at any time and thus is an aspirational but a realistic target.

For this study we will be focussed within the Palmerston North City boundary to manage the logistics of the intervention, particularly the transport component. This will decrease the total available number of potential participants to take part in the study as distance will increase the time spent travelling. There is an inability to provide transport for out-of-town participants. However, all potential participants that are non-PNCC residents are welcome to join the study and the other intervention benefits (for example, support and CR programme kai).

Study Eligibility and Exclusion Criteria

The eligibility criteria are:

Referral from:

- Palmerston North hospital
- General Practitioner
- Nurse
- Self-referred

AND

- Live within the Palmerston North City Boundary

Potential participants are excluded if they:

- Have an unstable condition that requires further investigation
- Are not residing in the Manawatū

Withdrawal Criteria

Participants may choose to withdraw themselves or any individual information, such as their own participant interview or CR communication contact information from the study at any time. They will not, however, be able to withdraw their anonymised uptake and attendance data as it is impossible to extract their individual information from the anonymised data.

Recruitment

<u>Current referral procedure</u>

Palmerston North hospital cardiology staff will be the primary point of recruitment for this study. Once a patient is identified as eligible to be referred to the PHO P2CR programme, ward procedure should be followed to approach the patient for approval to be referred. If the patient agrees to participate in P2CR then their discharge notes are faxed to the PHO and their GP. If the patient does not want to attend P2CR their discharge notes are faxed onto their GP only (the PHO does not receive any patient information). This process is the current referral procedure.

Recruitment process

Recruitment, for the purposes of this study, will be used alongside the above mentioned procedure.

Expression of interest

1. All patients eligible for P2CR referral will be asked if they are interested in participating in the study to understand their progress and experiences of P2CR after they attended the programme.
    - This is whether or not they are willing to participate in P2CR. For the purposes of this study participants are tracked patients who have taken part in P2CR.
    - “Tracking” consists of frequent (weekly or fortnightly) contact by face-to-face, phone, or email.
    - This expression of interest in no way is an obligation to participate in the study nor should it be viewed as consent.
2. The expression of interest is notated on the ANZACS-QI data sheet which is then passed onto the cardiac procedures nurse for input.
3. The cardiac procedures nurse will then record on an excel spreadsheet all patients that are requested to be referred to P2CR.
    - The spreadsheet contains demographic and contact details of patients
    - The researcher will not access this spreadsheet, but it is required to audit uptake of study, and P2CR, participants.
    - A list generated from the spreadsheet is to be emailed by the cardiac procedures nurse every week, from the beginning of the recruitment drive to the beginning of P2CR programme to the researcher's supervisor.
4. Reminders will also be sent to hospital and GP clinic staff via nurse managers that the study is about to begin and during the intervention phase. This is to enable adequate and stable recruitment over the course of the study.

5. The follow-up contact (phone or email) for the expression of interest will be made by research staff in the following week and it is at that stage the patient will be asked whether they consent to participating in the study.
6. The recruitment of KMCR were done by finding the services via the Heart Foundation website. An expression of interest email was sent to them and then a follow up phone was done to gauge their interest. If they wanted to take part, participant consent forms were sent and a time and date were identified to undertake an interview.

Overall, weekly emails, listing all patients referred to P2CR will be sent to the PHO by hospital staff to ensure that the facsimiles are being received. Weekly emails will be sent to GP clinics during the recruitment phase of the study reminding clinics of the availability of P2CR for referrals. In addition to the nurse asking for patient approval to attend P2CR, they will ask the patient if they are interested in their progress being tracked. This expression of interest consists of a note on the discharge note that the patient has confirmed their interest in the study. Patient contact details will be passed onto the study researcher (Dr G Kira) by the cardiology staff in order to gain consent into the study.

Consent

The researcher and research supervisor will contact potential participants and provide them with study information either via face-to-face, mail or electronically (email). Once consent is obtained, a copy of the patient's discharge notes will be accessed for study records. As per ethical guidelines the participants will be informed of their right to withdraw from the study and that withdrawal will not affect their eligibility to attend P2CR.

Data Collection

This study will use qualitative data using semi-structured interviews with participants who have consented once the intervention is completed to collect the primary data for the study. The interviews were undertaken over the phone, due to the researcher residing overseas. The aim of the study was based on how the tikanga approach could help to increase the uptake and appeal of CR, particularly for Māori with the data collected through the interviews. Undertaking these interviews for the research allowed for themes to emerge. This offered the researcher an insight into what is important to the participants and if the intervention with underlying tikanga concepts benefited them in positive ways making them more comfortable and more likely to attend sessions and complete the programme.

Before the interview begins with participants they will be provided background on the study and consent forms will be checked again to ensure they consented for their interview to be recorded. The recording of the interviews were done via an iPad with an app called voice memos and used to record the participants while on speaker phone. These recordings could be downloaded and re-listened to, to analyse the information in conclusion. The interviews took between 20 minutes to an hour. Notes were taken after the conclusion of the interview to reflect and transcribe on the information that was provided by the participants. Transcriptions were done by the researcher, then typed out to gather and find the relevant themes that were present within the data.

Having undertaken this research during a global pandemic the impacts of covid has provided a few setbacks in terms of the data, including a major problem of identification of patients who are Māori. Māori patients are already underrepresented within CR and are at greater risks of cardiac events. Therefore, the disruptions of the pandemic created further inequities to an already badly affected situation within this area of health for Māori.

Due to the no show of Māori patients within the intervention, largely as a result of hospital referrals not reaching PHOs and covid restrictions there was a need to shift the gaze of this thesis in order to complete it. The data that was collected was based on the following;

1. Interviewing Pākehā participants from the intervention to see how they felt about the offering of the CR sessions with the Te Ao Māori lens and Māori threads throughout the sessions. The aim was to get between 8-10 patients to interview (no less).

2. Interview Kaupapa Māori CR services (at least 4 units) to compare the differences of the intervention undertaken with the Māori lens within the general population and how it differs from their Kaupapa Māori CR sessions for patients.

Acceptability interviews

Process evaluation questions will be asked with a sub-sample of intervention participants and key stakeholders to assess acceptability and assist formulation of recommendations for further research, policy and programme planning. These questions for the participants and KMCR can be found via appendices 3 and 7.

Data collection points

Initially the plan was for participants in the intervention group to register initial details at baseline and to be followed up at six months post discharge. However, due to the nature of this thesis and the timings the six month post discharge information will not be used within this study now. Data was intended to be collected of participants who undertook CR from prior years as a comparison group however, due to unforeseen circumstances of covid, staff turnover in Think Hauora and the timing of the study this was not able to take place either. Thus, the data that was collected via the semi-structured interviews will be the main data collection point. The interviews will be transcribed and themes will be recognised that are seen to be important to the study and recommendations.

Field Notes

Field notes were provided by Sarah Holdaway, the Kaiawhina employed to liaise with Māori for the Think Hauora P2CR programme. She provided a journal during her involvement with the CR intervention and her interactions with participants and staff. This offered insights for the researcher to understand the processes that were followed during the programme. Observational data was collected by her from a te ao Māori perspective and what practices were followed by the HPs of ThinkHauora in CR. This data can be referred to via appendix 8 of this document.

Measures and Analysis

For this study two sets of semi-structured interviews will take place. These types of interviews are open-ended questions, exploring experiences of participants, encouraging them to talk on issues relevant to the research (Tong et al., 2007). The primary set of interviews were intended to be between 8-10 outpatients by which were conducted by the researcher over the phone; however, only 7 outpatients agreed to the study. The secondary set of interviews were with 4 Kaupapa Māori CR units. This helped to compare the differences in their referrals and CR services to conventional CR services as per the programme followed by this study. Semi-structured interviews are the most commonly used interview for data collection due to both its versatility and flexibility in allowing improvised follow-up questions based on participants' responses (Kallio et al., 2016).

Participant interviews follow an a priori thematic analytic method drawn from the seminal Māori cultural text, ‘Living by Māori values’ by Sir Hirini Moko Mead. Themes that represented tikanga Māori were identified from the text and applied to the interview transcripts. Tikanga themes were selected because the CR programme was built around tikanga values such as manaakitanga (generosity and hospitality) and mana (respect and authority). All the themes can be found in the table below.

Table 1. List of priori themes actualised for participant interview data

Theme (Participants)	**Description**	**Sub-theme**	**Description**
Manaakitanga	Hospitality.	Aroha	Kindness.
Whanaungatanga	Relationships.	Whakapapa	The link or bond of the relationship is usually set up early in the journey.
		Kanohi Kitea	A face seen.

Tika	To be right.	Pono	True to the principles of the culture.
		Tūturu	Genuine.
Take-utu-ea		Take	Breach of tikanga.
		Utu	Reciprocation or compensation.
		Ea	A desired outcome.
Mana	Value among personal and group relationships.	Mana tangata	Personal prestige based on proven works, skills, contributions.
		Tuakana-teina	Social standing - age, skill & experience.
Tapu	Sacred, respecting people or processes.	Te tapu o te tangata	The sanctity of the person.
Noa	Balanced or safe state.		
Hau	Wind & aura - associated with wellbeing and health.		
Wairua	Soul or spirit - part of the whole person, is immortal.		
Mauri	Life principle or the spark of life.	Mauri Tau	Mauri at peace.
		Mauri Oho	Shock or surprise.

		Mauri Rere	Flying mauri (left the body).
Theme (KMCR)	**Description**	**Sub-theme**	**Description**
Institutionalism	Social order.		
Mana	Value among personal and group relationships.	Mana motuhake	Self-determination, independence.
		Mana tangata	Personal prestige based on proven works, skills, contributions.
Manaakitanga	Hospitality.		
Referral	Act of sending someone or something for an examination.		
Take-utu-ea	Breach of tikanga if an activity is deemed to be improper.		
Whanaungatanga	Relationships.	Whakapapa	The link or bond of the relationship is usually set up early in the journey.

The analysis for the Kaupapa Māori CR units will be a standard inductive thematic method. This approach will be used to identify major themes to emerge from the raw qualitative semi-structured interviews of Kaupapa Māori programme staff. There will be repetitive reading of the transcripts to identify recurring, significant concepts which will then be coded from the transcripts in addressing the research aims. Data was entered and formatted in Microsoft Word and the transcripts coded and then re-read to ensure all themes were found. Words that are repeated frequently were highlighted within the text and connections made to the relevant themes from the participants.

The following table below gives a progression of how the study was undertaken and who collected data and analysed it;

	Hospital	**PHO**
Expression of interest study	Nurses	Nurses
Recruitment	Geoff (supervisor) Sarah (Kaiawhina)	Geoff Sarah
Data collection	PHO sends us enrolment data	
Intervention	At PHO Sarah to communicate with study participants	
Completion of intervention	PHO sends on completion data	
Interviews	Patti (researcher) conducted interviews	
Analysis	Patti Geoff	
Writeup	Patti	

Ethical Considerations

The following research is a low risk study to both the participants and KMCR. The research only needs minimal ethical approval and consideration. Ethics approval was submitted to the Massey Human Ethics association where low risk was established for both the intervention undertaken with outpatients in Think Hauora for P2CR and also for Kaupapa Māori CR units interviews. Below are further specific considerations.

Informed consent

Potential participants who meet the inclusion criteria were asked for their expression of interest in this study and if an interest was expressed their contact details were passed onto the researchers. The researchers contacted the potential participants and supplied a participant information sheet (PIS) (Appendix 1). The potential participants had this PIS verbally explained to them, and were given the opportunity to discuss the study with the researchers. Potential participants were given time to consider and discuss the PIS with others. If potential participants were still interested in taking part they were given a written consent form (Appendix 2) to read, consider and sign. Potential participants were asked if they understood and consent to the process that was used. As for KMCR a similar process was followed. An expression of interest email (Appendix 4) was sent onto potential KMCR that were identified as candidates to participate in the research. Following this a follow up phone call was done by the researcher to further engage with the staff from the services and explain the information sheet (Appendix 5). If they were interested in taking part a consent form (Appendix 6) was emailed to them to fill out and send back and a time was scheduled that suited them to undertake the interview.

Maintenance of confidentiality and compliance with the Privacy Act was emphasised to all study participants. Participation in the study was entirely voluntary and (potential) participants had the chance to decline enrolment without giving any reason. A participant information sheet will be provided to participants with a written consent form.

Ethical issues to discuss

A number of possible ethical issues have been raised regarding this study. Massey staff, independent to this project, have been consulted in reference to potential ethical issues. These issues are discussed below in more detail with no particular order of priority.

Referrals

Current approach

The MidCentral DHB approached patients for their voluntary consent to be referred to P2CR. If the patient consents then the discharge notes are passed onto the P2CR team and the GP. If no consent is obtained the notes are sent to the GP only. Therefore, the likelihood that those patients without their discharge notes going to the P2CR will be lost to follow-up. The literature also shows beneficial outcomes for those patients who attend just one session of P2CR. The research team did request an automated referral procedure, that is, all eligible patients' discharge notes were forwarded to the P2CR and the GP whether a patient wishes to participate in CR or not. However, this was not possible at this time because it would require a Midcentral DHB policy change in confidentiality and privacy of the patient data.

Study approach

The DHB has agreed to a simultaneous approach for CR referral and study expression of interest. Hospital staff were to ascertain the patient's willingness to be referred to P2CR. Whether or not the patient responds positively or negatively, they were also asked for their expression of interest to be part of this study. A statement to the effect of:

> *"There is a local research study that is tracking the progress of patients from this ward. Are you interested in speaking with one of the researchers about the study after you have been discharged?"*

Their responses were recorded by hospital staff and entered into a MS Excel spreadsheet by the cardiac procedures nurse. The cardiac procedures nurse then sent an email of patients' contact details who have expressed interest to know more about the study. In the same email the anonymised data of those patients who have consented or not consented to being referred to P2CR. This descriptive data is crucial to demonstrate effectiveness of the study to improve uptake.

Upon receiving the email from the cardiac procedures nurse, the research staff contacted the patient to obtain consent for participating in the study. This provides the research team with the opportunity to contact the patients who have indicated they did not want to attend CR in order to investigate their knowledge status. This is a crucial issue that has not been addressed in the current referral procedure of the MidCentral DHB.

Patient transport

The study hoped to take the opportunity to utilise DHB or PHO related health transport services, that would financially benefit the organisation and procedurally benefit the study by being related to health – the administration and drivers empathetic to the kaupapa (purpose). However, this transport option was not feasible therefore, taxi chits were offered to participants free of charge to get to and from the CR programme.

Patient information

General anonymised data was requested from the health intelligence units of each DHB and PHO that were in the central region of NZ. Referral and uptake data was also requested from each CR unit in the same region. This information however, was not used within this study. Furthermore, all patients participating in the intervention were requested to allow the research team access to their discharge notes. This is to provide patient characteristic information about the patient related to their heart condition. They will have the opportunity for informed consent for this request. They may withdraw their information at any time.

Data for consent to CR and expression of interest for the study provided by the cardiac procedures nurse will be anonymised. Patient contact details were only provided of the patients who had indicated a positive expression of interest for the study.

Confidentiality

All data collected is kept strictly confidential under the data management policy.

Ethics of withholding intervention from people

There is no withholding of the intervention from any eligible potential participant. The professional opinion of the researcher is that it would be unethical to withhold the intervention as it is likely to improve access to P2CR for all. Additionally, there is no reason why the population being recruited should be any different from the population recruited in previous years.

Cultural approach

Interviews will be anonymised to allow interviewees to speak with openness (pono) and directness (horipū). However, as is a cultural imperative, some interviewees may desire to be recognised as a contributor to the interviews. In which case, a confirmation that they wish to be named will be available in the consent form and the participant will be informed of the possible ramifications. This was suggested by Dr Jeremy Hapeta (Ngāti Raukawa Te Au ki te Tonga, Ngāti Huia, Ngāti Pareraukawa), formerly of Massey University, now currently at University of Otago. He approved of the contributions so far and added that participants from the Kaupapa Māori CR units may want to establish their mana by being acknowledged as taking part. This situation has occurred in one study for Dr. Geoff Kira and therefore as suggested the advice was incorporated into the consent form.

Dissemination of Results

The results of this study will be disseminated in a few different formats. Firstly, the participants will be offered the opportunity to have a lay summary of the main outcomes emailed to them. A separate form will be provided for them to provide their name and email details.

For the purposes of this research an appropriate journal will be sought to outline the qualitative data results. A journal such as *Heart, Lung, & Circulation* will be identified as a suitable outlet for this scientific publication. There is the hope that presentations will be made at one national conference and scientific meeting such as CSANZ (Cardiac Society of Australia and New Zealand). A suitable international conference will also be identified for dissemination of this work.

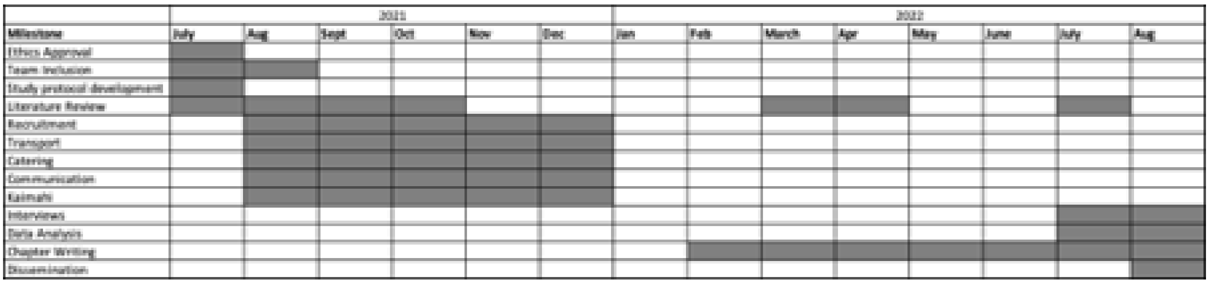
Summary reports, with recommendations arising from the study, will be sent to the PHO (Think Hauora), MidCentral District Health Board (now Te Whatu Ora Central) and CSANZ to assist them in the development of further prevention strategies for CR. Media and social media releases of the study will also be used to present the results, along with the publication when it is completed.

Key stakeholders of the research will be provided with the outcomes of the study. A hui will be held at a symposium for the Palmerston North Medical Research

Foundation (PNMRF) at the completion of the study. These key stakeholders such as Midcentral DHB and PHO, Manawhenua Hauora Maori (who are Māori health leaders that support the study), and interested parties such as participants and media can listen to the outcomes of the study and discuss the findings. Presentation of the findings to health organisations will also be offered, particularly Māori, and encourage them to invite interested local stakeholders.

This project has received support from the local Manawhenua Māori advisory committee of the MidCentral DHB. They had supported Dr Geoff Kira's initial project that was the precursor to this project. This is a community that has little research undertaken for their benefit and are enthusiastic that this work continues. They have apprised of this programme of research since 2013. This application is the third step of many to develop effective CR services for Māori. Manawhenua Hauora will be informed of final results through email communications and invitation to dissemination hui.

Timeline



	2021						2022							
Milestone	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug
Ethics Approval	■													
Team inclusion	■	■												
Study protocol development	■													
Literature Review	■	■	■	■					■	■			■	
Recruitment		■	■	■	■	■								
Transport		■	■	■	■	■								
Catering		■	■	■	■	■								
Communication		■	■	■	■	■								
Kaimahi		■	■	■	■	■								
Interviews													■	■
Data Analysis													■	■
Chapter Writing								■	■	■	■	■	■	■
Dissemination														■

Ethics approval in July 2021 was received from Massey University Southern A Human Ethics Committee (SOA 18/79). The applicant undertook a literature review this current year to update the rationale and health significance of the research. This took approximately four months. At the same time the researcher apprised herself of the previous research Dr. Kira had undertaken in previous years around this topic which represented the basis of the current study.

Recruitment and the undertaking of the study was pushed back from August 2021 due to a pandemic-induced staff shortage at the time. It took place at the end of the year in December 2021 and the beginning of January 2022. Transport, catering, communication and kaiwhakahaere represented the recruitment and retention components of the intervention. Interviews were scheduled toward the end of the intervention so that outpatients had sufficient time to experience P2CR. Data analysis occurred as transcripts were collated. Early writing of chapters 1 to 3 occurred during interviews and data analysis in late 2022.

Another ethics approval was also sought for the KMCR from Massey University later on in early 2023 (Ethics Notification Number: 4000026808). The research had to make a slight change due to the intake of participants in the intervention and further ethics needed to be obtained.

The project has required a number of extensions over the last number of years. This is due to the researcher encountering unforeseen personal circumstances at the end of 2022 and the year 2023. Therefore, the project has not been completed in line with the timeline. The expectation is to hand in early 2024.

Chapter 4: Results

Introduction

With the inability to enrol Māori into the CR sessions, the decision was made to interview non-Māori participants to investigate whether they were impacted by the tikanga based CR programme. It would allow the researchers to see the strength of the intervention with the use of mana-enhancing components used via the non-Māori interviews. Seven NZ European participants were interviewed who attended the CR sessions with Think Hauora. To further understand the underlying issues and challenges Māori CR patients face, interviews were also undertaken with four Kaupapa Māori CR units with their Registered Nurses. This offered insights into how a te ao Māori lens over non-Māori participants differed from KMCR and what the differences in referrals were like between the two from hospitals, GPs etc.

Thus, the following results section will present the themes that were drawn from both the participants of the intervention and also the KMCR. The most dominant themes from the participant data included manaakitanga, whanaungatanga, wairua, tapu, mauri and mana with the most prominent for KMCR being institutionalism, manaakitanga, referral, take-ua-ea, tika and whanaungatanga.

CR Participants

Theme One: Manaakitanga

A significant theme that appeared within the participants' data was manaakitanga. This was experienced in both positive and negative effects (no manaakitanga). This was shown via the processes of CR from the hospital through to the CR programme run by ThinkHauora. There is a high value placed upon manaakitanga, underpinning tikanga. It is based on nurturing relationships, looking after people, and being attentive about how others are treated (Mead, 2016). It is a form of hospitality. Another essential part of manaakitanga is aroha which is a profound message of love and connection (Mead, 2016). Aroha was also found within the data from the participants and treated as a sub-theme.

A06 stated that the team at the CR programme offered very good hospitality in terms of the information provided to them and also the exercise bands that were handed out to participants to encourage them to attend an exercise programme (initiative).

> *M, 74YO: The information was very well done. You were given your bands, you got the information on the day and you just built up like a little pile that you bought home and my pile is still in my drawer beside the bed and I look at it to see what exercises to do occasionally and that sort of thing….*

A02 also offered his thoughts in terms of the communication of the team who were running the CR programme. His comments aligned with the above quote and outlined the aroha that was shown to them during the programme.

> *M, -YO: Yes, they were brilliant, they definitely had our interests at heart….*

Another form of manaakitanga was shown through the kai (food) that was provided to participants at the CR programme. A03 was surprised at the lunch offered but outlined the healthy options there were.

> *M, 67YO: No, the food was great. You know some good healthy stuff there and umm I think the first time we actually went and got lunch first and then came along and thought oh they have actually got lunch for us….*

A07 also stated that having the kai allowed them to see what healthy options supported their nutritional needs after having a heart event.

> *F, 75YO: I thought that was good and it was teaching you okay well not that I'm a fruit eater but it was something there to provide for you if you needed it they did have some sort of umm not a sandwich but something like that too so I thought once or twice I thought oh I don't need to have anything before I go I'll just have it there….*

A02 also outlined the aroha felt from having kai provided to them.

> *M, -YO: Ohh, it was bloody fabulous, I didn't expect it at all….*

In contrast A04 outlined the absence of manaakitanga in relation to any cardiac follow ups from the hospital. However, he outlined the nurturing relationship and manaakitanga he had received from his diabetic clinic in relation to the lack of cardiac follow up.

> *M, 73YO: No and once again I am very thankful for the diabetic clinic here at Palmerston North ummm my last ongoing 12 monthly sort of review at the diabetic clinic she sent a letter to me it was a copy of information that she was sending because she was a bit surprised that I hadn't been seen by a cardiac specialist since the events or since the surgery….*

Both A03 and A06 experienced an absence of manaakitanga in terms of the referral process to CR from the hospital with a lack of communication. Their comments demonstrate how potentially patients could fall through the system with confusion on their referral of when, who and how they were actually referred to P2CR.

> *M, 67YO: There were lots of people all talking and I was either sort of with it or not. So yeah vaguely recall but got the general picture of what was going to happen….*

> *M, 74YO: I understand and I'm trying to remember. I think the hospital said to me there would be a cardiac unit or seminar that would communicate with me once I was at home and that's the way that I did work….*

Theme Two: Whanaungatanga

Another tikanga theme that emerged from the data of participants was whanaungatanga. Individuals are expected to be supported by their relatives near and distant, but the collective group also expects the support and help of its individuals (Mead, 2016). This is a fundamental principle of tikanga outlining shared experiences. Whanaungatanga also embraces whakapapa, focusing upon relationships (Mead, 2016). It is suggested as a link or bond of a relationship that is generally set up early in the journey. Whakapapa was also found in the participant data and treated as a sub-theme.

A06 outlined how whanaungatanga was felt during the CR programme by staff being welcoming and the relationships formed amongst other participants through their shared experiences with one another.

> *M, 74YO: Very, very welcoming, very friendly you know and I got on with chatting away to a number of people there afterwards…*

> *M, 74YO: Just by talking to the people who had gone through something similar to me…*

A04 and A03 also outlined the connections and experiences with other participants to form relationships within the CR program.

> *M, 73YO: I thought it was helpful in the total process, it was good to be able to hear the stories of other people who were also at the clinic…*

> *M, 67YO: No that was really good because especially with the seminars because you're sitting in there with people who had been through the same or similar experiences and everyone's just that little bit different you know…*

A07 also stated the same experiences with the group connections and relationships formed in the CR programme which offered support on their own journey.

> *F, 75YO: To be there and you know sort of hear them talk about it and hear what other people had been through as well how different things had affected different people…*

> *F, 75YO: And I think that's what it is and if you talk to people and you've got people to keep you on track that's really good…*

Whanaungatanga and whakapapa were also shown through the team that were running the CR programme at ThinkHauora. Participants A06, A03 and A04 all outline the support and relationships formed with the team were very important and valuable.

> *M, 74YO: But to see all these other people there at the seminar to have the speakers, very knowledgeable speakers on all sorts of topics and also the people around, it was brilliant….*

> *M, 74YO: Who had basically been through the same thing as me and you know you're not alone in this world sort of thing and to have the medical science there available…*

> *M, 67YO: I guess there would have been if you felt you needed it because there were always people there you could talk to and say you know all very well this is all fine but how do I go about it and they would have properly helped you with it…*

> *M, 73YO: Yeah no I have no complaints really as far as the program that was being run here in Palmerston at that level. I thought it was a useful thing to be a part of and the people there were professional and well supported…*

Theme Three: Wairua

The word wairua is translated as 'soul' or 'spirit' and it is a part of the whole person with immortal factors associated with it (Mead, 2016). This was another tikanga theme that surfaced from participant data collected from the interviews undertaken.

A01 expressed having an absence of wairua due to being told of his heart condition and didn't think that anything could be done. However, in attending the CR programme it has allowed him to change his thinking and uplift his spirits in thinking he might be okay.

> *M, 75YO: I think when I was first told that you've got a heart problem, that's it I'm going to die. But I'm not quite thinking that now.*

A06 outlined many aspects of how his wairua was affected due to his heart condition now being a part of him as a whole person. This was shown through how the programme and information has helped him to carry on with his life and understanding that the information provided is power to him as a person to make the right decisions for his health.

> *M, 74YO: Obviously very very knowledgeable people but umm what the people who ran the seminar and what they were imparting was also necessary for us to carry on with our lives…*

> *M, 74YO: Once again, the information your people were imparting was very good, to the point and it certainly struck a chord with me all the way through…*

> *M, 74YO: I've always been a person, all my life, I've always said that information is power....and you can never have enough information when you have to make the right decisions…*

> *M, 74YO: At the sessions that I went to and because you know the speakers were also looking for informal for yah know umm what had happened to us as people, did this happen to you, did this happen and we were able to say this and that was really good to because it strikes a chord with like myself…*

A03 experienced an uplifting of wairua in terms of the people and information offered at the CR programme and learning about their medications and how those are helping them in terms of their condition.

> *M, 67YO: Absolutely, yes no they were all brilliant people and the fact that whoever organised it had taken the time to get the right people in at each seminar… so hey here we're talking about medications let's get the chemist in you know because they can talk about what your medication actually does. We're all vaguely aware of diet and the need for exercise but again having the right people and no that was all really good stuff….*

A04 felt uplifted in their wairua in attending the CR program due to seeing how other people were in comparison to them, providing a sense of hope.

> *M, 73YO: Ummm and feel very much ummm that I was doing pretty well compared to the majority there….*

A05 also outlined the wairua that surrounded her within the CR programme and updated her knowledge with new information and also the parts she enjoyed within the programme.

> *F, 75YO: I think it was very useful because it was updated… I think the benefit for me is I had the core knowledge of anatomy and you know having a nursing background but I was out of date and there was so much current info that has changed when I was actively looking after adults, so for me it was valuable….*

> *F, 75YO: I loved doing the exercise programs and working out what you could do safely to know where you're at…*

> *F, 75YO: Yeah and I guess it's given me enough of an eye opener to make me motivated to think right, you've had your warning, get your act together…*

In contrast, A07 and A06 expressed feeling a lack of wairua due to family histories of having heart conditions.

> *F, 75YO: Umm because my brother; eldest brother died nearly 26/27 years ago from an actual heart attack….*

> *M, 74YO: And the entire family on my parent's side is heart attacks and strokes…*

Theme Four: Tapu

The concept of tapu is regarded as an important element in all tikanga. This is evident within the participant data that was collected. It is a sacred life force, reflecting the state of the whole person and about respecting people or processes (Mead, 2016). Another tikanga value that was evident within the participant data that is often paired with tapu is noa. Noa will be used as a sub-theme to tapu. Noa refers to the restoring of balance or a safe state (neutrality). The role of tikanga is to then reduce the levels of dangerous tapu until it is noa or safe with the state of noa indicating balance has been reached, a crisis is over, health is restored and life is normal again (Mead, 2016).

A06, A04 and A03 all outlined reflections of tapu in terms of their state as a person and the respect they had for the processes that needed to be taken in terms of CR and understanding their own conditions.

> *M, 74YO: At the sessions that I went to and because you know the speakers were also looking for informal for yah know umm what had happened to us as people, did this happen to you, did this happen and we were able to say this and that was really good to because it strikes a chord with like myself…*

> *M, 67YO: Yeah as I said those rehabilitation sessions were brilliant, they were really because they had the experts there in their own field and that's what we're talking about today. And why and why do we do this and what effect does this have on you and it was absolutely informed stuff…*

> *M, 73YO: Yes, I am pretty sure they sent literature to me and said ummm gave me a lot of information in pamphlets and so on and so forth as to what to expect and some of the changes I needed to do in my lifestyle and one of those was offer to be a part of that rehabilitation clinic…*

A05 demonstrates tapu due to the family history of cardiac issues. She understood there was a need to respect the process and life force that was being thrown her way in terms of going to see a cardiologist to better understand what was happening with her health. She had negative experiences so did something about it to realign.

> *F, 75YO: Mine was a bit different, I had a bad chest infection, needed a chest x-ray it was noted that my heart was slightly enlarged umm because my brother died of a heart disease, my father died at 66 of a heart attack and others in the family had severe heart disease it was decided that… I better be seen by a cardiologist to check it out.*

Both A05 and A06 show tapu in the below quotes by reflecting on their whole state as a person and coming to a realisation of their condition and the processes needed to personally overcome their health issues.

> *F, 75YO: Yeah well, I knew that there was a lot of stuff I needed to bone up on if I really had a heart condition so I needed to, you know and I got sent the program and I thought it looked interesting as well.*

> *M, 74YO: No, it was huge, it comes to a realisation that and that was only in like two sessions a group within the last six or nine months this many people in Palmerston North… They come to these seminars and had some kind of operation work done on their hearts and so it's a huge realisation well you're not the only one in the world that has had…what I had been going through.*

> *M, 74YO: Yup yup and it was also very good that they kept it really personal… it wasn't just cold information blah blah blah…*

Both A07 and A03 reflect on a negative form of tapu they experienced. A07 was in relation to the hospital and how giving a pamphlet to someone on CR is not the right approach in terms of referring them to the programme. The negative reflection also covid had on waiting to go into the CR programme. While A03 was trying to get a colleague to attend CR and say how good it was after he had already had a handful of heart attacks but he did not have the time or means to, in turn affecting his state of tapu.

> *F, 75YO: So you see it's a matter of talking to somebody about it and I mean just flicking a pamphlet to you or giving you a pamphlet and saying here read that it would be nice to have someone to just be there you know.*

> *F, 75YO: Yeah I think it was good and just keeping people informed I mean hopefully next time or others won't have to put up with that covid keeping waiting because I think it was you know it was a good six weeks later.*

> *M, 67YO: And I really tried to encourage it. I said you really should because they have some good people there and yeah but no he didn't.*

Following on from tapu, the tikanga aspect of noa that is embedded within tapu is also evident in the data and allows the balance of participants' health to be restored and feel safe within the environment. A02 outlines how he felt the communication of the team at ThinkHauora was great and a safe environment.

> *M, -YO: Yes, they were brilliant, they definitely had our interests at heart.*

A04 also stated how inviting and welcoming the team at ThinkHauora was and how it was a safe place and balanced environment to be in, supporting each other and helpful.

> *M, 73YO: Yeah ummm they kept us informed and they were inviting as far as being there and the check-ups on like blood pressure and pulse and the interview, answering questions on about what I was doing and managing that was all helpful to know…and I thought that if anything that was urgent would have been followed up if I wasn't doing as well as I should be…*

A05 and A06 stated the programme was good at aligning themselves with their conditions while also having a bit of fun and a few laughs along the way too due to being in a balanced state of noa.

> *F, 75YO: I understood more about where I was heading and what was going on which was…*

> *M, 74YO: There were also a few laughs along the way, this sort of thing you know. No, I thoroughly enjoyed the seminars…*

A07 and A04 both declared they would redo the program again and did not want to give it up. This outlines how they felt the program worked and was restoring their balance and safe state after their heart event.

> *F, 75YO: Yes I knew a bit but I think I felt that I really would have liked to have… I don't know whether I had been given a number, I've been given a number today of who I can ring… if I've got any questions about what's been going on umm because I sort of felt that in a way I would have liked to go through that course again and so even after a while I wouldn't have minded going through it again…*

> *M, 73YO: Yeah, I wasn't reluctant to give up the program. You know I didn't feel like this was a waste of time or whatever… I thought it was a useful thing in the process.*

Theme Five: Mauri

There is strong evidence of the tikanga concept mauri within the participant data. Mauri can be defined as the spark of life or life principle that is another very important spiritual attribute of a person (Mead, 2016). Mauri is said to become an attribute of the self, something to nurture and protect with the self and the mauri being one. If something is wrong with the mauri, the person is not well. When a person is physically and socially well, the mauri is in a state of balance (mauri tau - at peace) and when a person receives shocking news or is surprised, the mauri is startled (mauri oho) (Mead, 2016).

Both A05 and A07 demonstrated mauri at the surprise of other people not taking up CR and the importance they thought the programme would have on their wellbeing and life.

> *F, 75YO: I think it's valuable and I think umm I was saying there's a lot of people that don't bother to do and all I can say is they're missing out on something that could be really important to them and they need to sit up and take notice.*
>
> *F, 75YO: anyway she came along to the first one but she said oh no she's going home to Taihape and she said I can do all these things you know and I thought well I don't care if I was living in Taihape I would have come down to them because they meant that much to me.*
>
> *F, 75YO: Yeah, I was quite shocked to find how many people don't take it up.*

A01 outlined a lack of mauri due to having a family history of heart failure and strokes/angina. He did not have a state of balance of his mauri and wellbeing knowing this. A07 also showed a lack of mauri by only feeling she knew the basics of her condition but she dealt with it by talking to her family and saying she was okay to gain that balance of her mauri again. A05 also felt that by being involved in the programme it lifted her spirits on being more motivated for her health, increasing her mauri. A06 had a lack of mauri too in terms of not being able to exercise and get his heart rate above a certain point due to his heart condition. This would have impacted his spiritual well-being negatively. A02 also had a lack of mauri in terms of how long it takes to get into programmes like CR and living alone he was not able to talk to anyone about his condition.

> *M, 75YO: my father had heart failure and my mother had a series of strokes and angina ... and I am sort of like well that's not good.*

> *F, 75YO: I had the basics of what it was but umm and the only way I could deal with it was you know ringing family and just talking to them each night and in particular ringing mum saying I'm okay.*

> *F, 75YO: Yeah and I guess it's given me enough of an eye opener to make me motivated to think right Gail you've had your warning get your act together.*

> *M, 74YO: That absolutely did my head in, it was a lot of I guess psychological trauma.*

> *M, -YO: …..being on my own there were a whole lot of things I hadn't thought of. And it takes so long for these programmes and oh hello oh i'd never thought of that. Oh I hadn't thought of that and I was just on my own anyway.*

A02 and A05 experienced mauri oho in terms of the kai (food) that was provided at the sessions and also getting referred to the CR programme. It offered an impact on their mauri.

> *M, -YO: Ohh, it was bloody fabulous, I didn't expect it at all (kai).*

> *F, 75YO: Yes, yes and I could see that… in fact there were things that I thought ohhh I didn't think I'd be allowed that but they were (healthy kai options).*

> *F, 75YO: Well for me the process worked and I must admit I was a little bit surprised...... Because umm knowing that I hadn't had a heart attack or an actual intervention but I'm glad it did (getting referred).*

A03, A06 and A07 demonstrated mauri through being involved in the CR programme and the impact that the ThinkHauora team and experts had on them. The programme allowed them to gain their spark of life back and see they can carry on with their lives with the conditions they have encountered by seeing beyond it.

> *M, 67YO: Yeah as I said those rehabilitation sessions were brilliant really because they had the experts there in their own field and that's what we're*

> *talking about today. And why and why do we do this and what effect does this have on you and it was absolutely informed stuff.*
>
> *M, 74YO: Obviously very very knowledgeable people but umm what the people who ran the seminar and what they were imparting was also necessary for us to carry on with our lives.*
>
> *M, 74YO: Yes, I was because... in the taking part I actually found out more information about me that didn't come to me from the doctor, the cardiologist, the surgeon or the hospital or anybody.*
>
> *F, 75YO: So I do feel that I have another head start now and I've got it through my mind that I have to get my exercising back into order and accept that some of the stuff that you read is not really applicable to me and I've got to be careful what I read and just you know.*

Theme Six: Mana

The word mana has a range of meanings including authority, control, influence, prestige, power, psychic force, effectual, binding and authoritative (Mead, 2016). Mana is an important tikanga component that was found within the participant interviews. It is the value among personal and group relationships, described as a creative, dynamic force that motivates an individual to do better than others (Mead, 2016).

A06, A04 and A07 outlined their increase in mana by taking part in the programme and finding out more about themselves and their personal value and much needed information from the programme.

> *M, 74YO: Yes, I was because….in the taking part I actually found out more information about me that didn't come to me from the doctor, the cardiologist, the surgeon or the hospital or anybody.*

> *M, 74YO: Yes, I have, just to refresh my thoughts and mind and sort of see how I can incorporate what, the information the seminar people were giving me to incorporate that into everyday life.*

> *M, 73YO: Yeah, I wasn't reluctant to give up the program. You know I didn't feel like this was a waste of time or whatever… I thought it was a useful thing in the process.*

> *F, 75YO: Oh I'll tell you what I really liked, was the fact that they explained to you the medication. Because then I understood what every medication was for and umm so that was good so I did enjoy the whole thing.*

Both A02, A05 and A06 sort mana by the influence the programme had on them. It was a motivating factor to them on how well run the programme was and how it would affect them and their conditions creating mana.

> *M, -YO: I kind of went there without too many expectations and no because the whole thing was new to me and I just thought everything was pretty bloody good.*

> *F, 75YO: You know because you know a certain amount but when it's yourself you have a sudden interest in the details.*

> *F, 75YO: Yes, because alright I have a nursing background but I don't know what's current and what's what and I thought it would be a really good learning exercise to see what's what.*

> *M, 74YO: The people that were the speakers umm the topics were of stuff that we needed to know. Like you know I don't come from a medical profession. I am widely read and I've got a fairly good understanding medically but not the actual if you get what I mean.*

> *M, 74YO: Obviously very very knowledgeable people but umm what the people who ran the seminar and what they were imparting was also necessary for us to carry on with our lives.*

There were also a few participants (A05 and A07) who lacked mana. Feeling guilty they were offered access to the programme along with those who do not take up the programme and missing out on something that could be really beneficial to them. Those who also had a bit of fear around their condition and not knowing what was okay to do or not.

> *F, 75YO: Yes, I was comfortable with it. It was also… I think it's knowing that you weren't the only one, you weren't an oddity, everyone… in fact I sort of felt almost guilty for being there because others had had heart surgery and everything else and I had just sort of been caught just in time sort of thing.*

> *F, 75YO: I think it's valuable and I think umm I was saying there's a lot of people that don't bother to do and all I can say is they're missing out on something that could be really important to them and they need to sit up and take notice.*

> *F, 75YO: Yes because you see I really feel that I'm not really… I mean I'm doing lots of walking and all that but I feel like I'm not going for the walks that I used to, I used to go walking quite a bit but then I hadn't been… at the time that I went into hospital but I think at the moment there's been a little bit of ummm what do you say…. self-consciously there's a little bit of a fear there or something.*

Kaupapa Māori CR Units

The following results are drawn from the transcripts of the CR nurses from the four KMCR who were interviewed.

Theme One: Institutionalism

Throughout the interviews with the KMCR information was collected that was strongly associated with institutionalism. This is used as a way to shape and influence behaviour, interactions and societal structures. It is crucial in forming human behaviour and maintaining social order that is utilised to engage a highly formalised system.

One of the KMCR (B01) outlined a number of factors that demonstrated how institutionalism is a challenge within CR services for Māori. It showed how the mainstream structures in the health system may not be best suited to Māori and a lot of issues are from past experiences Māori have had with the system and time restraints on GPs.

> *"...often whānau are resistant due to experiences they have had previously especially with bureaucracy and I guess colonial systems you could say…"*
>
> *"I think it's time constraints for a GP so a GP you know a lot of them have high…. The ratio for GP and population, there's just not enough GPs at this stage and what happens is they are overloaded and they are meant to detect trends of declining lab blood results and often they just don't have the time to sit there and look at each patients trend until there's a particular level that it hits and it becomes an alarm whereas what we can do as cardiac rehab nurses is that we can look at a patient's lab blood results and see trends way before they get to that critical stage…."*

Another issue B01 speaks about in terms of institutionalism is staffing and the way that these particular organisations are paid compared to mainstream. They have a lot of staff turnover in this area which then hinders the process of CR for participants with many changes in this area where it is important in building relationships and trust for this population.

> *"Yes, so what happens is that, as a Māori health organisation we are not, our nurses are not paid the same as what they are in the hospitals and the DHBs…"*

> *"So, our nurses are paid about 20 to 30 percent less, you'll see that in the news if you google and look that up you'll see, and that's going to get even worse come the 7th of March ummm next month because umm the nurses in the DHB have received pay equities, their getting a 14 percent increase so it's going to be even more problematic for us…."*

B03 then speaks to this term in how the system does not cater correctly to Māori patients because of the difference in non-Māori and Māori life expectancy. With them further stating the care from cardiologists after surgery is not good for Māori.

> *"Yeah, and that's why, I get really angry because our life expectancy isn't as high as non-Māori but umm services aren't available...you know the number of times that I've tried to find support for a person under 60...that is so hard and that's because lots of services are only available for 60 plus…"*

> *"Well some of them haven't seen, haven't had any follow up appointments…"*

B04 also talks about the colonial system and past history affecting the engagement of Māori participants into the health system and CR services within their area. They have also been further implemented by the withdrawal of funds for their service which would be based around institutionalism too.

> *"...so a lot of our males up here particularly our Maori males their not engaging with their GP at all so this might be the first time they've had this heart event and it would be the first time that they've actually been in engaged you know and I'll make sure that their getting their blood tests done and having follow ups with their GPs as well and so it does get them engaged more and because you know it freaks them out they've had a heart attack, so they want to be engaged because they don't want that to happen again…"*

> *"Yeah, well first we had a contract for CR and it was funded through the primary health organisation or enterprise what their calling themselves now but they you know done a whole heap of chops and took that funding away...but it still needed to happen and it was still receiving referrals and all so um yeah just… I continued to do it however because we don't have the funding or the contract for that I'm limited to only doing it to...for those who are registered with the GP practice I work for…."*

Further to these KMCR another CR service (B02) has suggested the opposite within their region. That there is no specific difference between Māori and non-Māori in their service.

> *"No, no definitely not, because they all just come, you know it doesn't matter what ethnicity, everyone gets the same referral process…"*

Theme Two: Manaakitanga

Like the participant data, a significant theme that emerged in the Kaupapa Māori unit was also manaakitanga. This was experienced again in positive and negative ways within the processes of CR. Manaakitanga underpins tikanga. It is predicated on providing for others, fostering relationships, and paying attention to how others are treated (Mead, 2016). It's an act of kindness and hospitality.

B01 stated ways in which manaakitanga was demonstrated and upheld within their organisation by providing much care and holistic approaches that are not always about health for their participants to feel nurtured.

> *"Yes, and the reason we hold onto them is because not only are we providing that nurse education service we are also providing a social worker, social support and so we need that to wrap around the patient umm social support and lifestyle…"*

> *"I tend to do that in my role so that it's quite consistent across who we have coming in and umm I'm quite gentle and I try to use my nice voice. You know,*

> *just a nice gentle demeanour so that it's not abrupt….sometimes one thing I will ask is, sometimes I won't even talk about necessarily that health thing that bought them in, I just check if they're okay with the housing and the kai fact as well because it's all very well and come in with health when there might be some other things that are really dyer…"*

However, B01 does go on to talk about the lack of manaakitanga from the hospital systems for Māori and how they can be treated. However, they speak on how they combat this with their service though and provide their care.

> *"We are able to go out to see whanau so that's one thing that's removed in terms of a barrier is transport, we're able to deliver everything to the doorstop to the whanau offering that wrap around support so yeah in many ways' barriers can present, can be psychological barrier, mental barriers and just the processes that…. the structure of the hospital system and sometimes the inflexibility, GPs only offer 15 minute consultants normally and you can't go beyond that, we can stay for one to two hours with our sessions until they fully understand and every question answered and we've gone over it again so…."*

> *"People that perhaps have spoken to them in a way where they haven't had any control or set goals and tailored it around whanau needs or their needs or transport needs…"*

B03 has outlined ample amounts of the health system not showing any manaakitanga to their patients too. Some of the quotes below demonstrate critical gaps in the clinical relationships needed within this area and a great example on how the hospital lacks this manaakitanga and how the Kaupapa Māori unit have formed a good relationship with their participant to form trust with her and their service compared to the hospital.

> *"I'm picking up people that have come out of hospital having had major heart surgery and they come to us at the clinic because they're freaking because they're scared because nobody has given them good preparation before they've been discharged…"*

> *“I said did they give you a contact number or that one of the cardiac nurses from the hospital is going to make contact and he goes no; he said they just gave me my discharge letter and sent me off. I said to him okay, how about I come and visit you…?”*

> *“I said to her on discharge out of hospital their nurses will come and see you. She said nah I don’t want to see their nurses. I asked why and she said because she’s mean, she’s an old lady that came to my house last time. I said okay we need to sort that and she goes but you’re my heart nurse I want you…”*
> *“I know it just blows me away...One guy rang me and said I've been discharged from the cardiac ward ....I said oh okay what went on? I had a heart attack but they said oh it was only a little one and then discharged me but I’m scared to do anything in case I have another….”*

However, B03 offers an abundance of manaakitanga through their service, particularly in a more holistic way and not just focused on health as the main aspect with the following example outlined.

> *“Yeah, well he’s been blown away because of the work that we do for him and you know I’ve bought the whanau ora navigator in with us, in with me and she’s the one that’s got the whanau direct for him, a grant for him so he’s managed to get him a new bed, some new clothing….”*

B04 also outlines how building relationships and trust for participants is key in allowing them to be open and also come back to the service as they have been taught how to look after themselves better.

> *“...all the people that I’ve worked with definitely appreciate all the education and follow-up and all of that and then I sort of look at them later on or they might come around again for something else and it’s like oh look so they are getting regular follow ups and things like that…”*

Theme Three: Referral

The term referral can be defined as the act of sending something or someone for examination, consultation, or more action. For instance, a GP may refer a patient to a medical expert. Thus, this concept was evident throughout the KMCR interviews. They provided essential understanding and rich data on how the referral process works for these organisations and Māori participants in both positive and negative ways.

B01 outlined there was a lot of confusion around referrals for their participants and they did not understand secondary care and why referrals were not made.

> *"A lot of GPs don't refer necessarily and patients don't even understand a referral to a secondary, to another specialist whether kidney, cardiac, cardiologist. So, the patients would be questioning oh why didn't my GP refer me earlier and sometimes we don't know the answer to that and umm we just support that patient with that even to diabetic appointments, podiatry…"*

> *"So, there's two lines of communication...with the referrer and that would generally be phone call or email and then the patient themselves if they are accepted, we generally don't ring the patients to tell them you are not accepted, if it's quite clear their not accepted we will do that through the referrer, because then the referrer can have that korero with the patients and I would write a comprehensive letter to the referrer outlining perhaps why their declined you know they might need CADS or dementia care or dialysis or all of those things that are in the exclusions so I'd do that for the referrer…"*

B03 outlined the neglect of follow ups from the hospital and lack of referrals they had received at all.

> "*....I'm blown away, I've never worked in a service where the hospital has really neglected patients on follow ups… I'm not sure if it's just Māori but it seems they are the ones I'm working with and the ones discharged and their not a) got support in place & b) have no idea what to expect or what's going on…"*

> *“I mean it may have been different for previous workers in the contract, nurses that have worked in the contract… but yeah umm, I’ve been there 12 months and I’ve had no referrals from the hospital, all my referrals have come from external providers or self-referrals, yeah…”*

> *“...right at the beginning there used to be a good amount of referrals that came from the hospital but that has kind of dropped off over the years, you know it’s the usual challenges of working in a hospital, you know you’re running out of time to be able to do the referrals into any of the outside services…”*

B04 also outlines the process that they went through with their referral system. She also identifies that not all are Māori going to their service which is great.

> *“And then because the referrals don’t come directly to me they come to a central point of referral within our team, within our service and um so it’s not me triaging those referrals and like sometimes if they’re not within our service like they’ll just be told like they can come to the classes but there will be no clinical follow up and then that referral might not even land in my lap, they’ll just get a phone call from that triage person…”*

> *“Hmm nah there properly yeah sort of hand in hand. So out of the five that I got this month, sorry not this month in February ummm… so out of the five that I got three of them were Maori…”*

B02 also provides how they assess their participants in how they are obtained within the service.

> *“We tend to do a one on one assessment first like we just don’t send them an invitation to the rehab programme to turn up. We’ll do an individual assessment first and then check out if they're keen to come to the programme, explain what the programme is and if not then we’ll offer an individualised, so definitely face to face or by phone…”*

Theme Four: Take-utu-ea

It is possible to claim a breach of tikanga if an activity is deemed to be improper. There must be some form of resolution because the breach has occurred. After a *take* is decided upon, the harmed party is frequently offered an appropriate *utu* (recompense) or other appropriate gesture. The goal is to address the issue by coming to an agreement that satisfies all parties. A state of *ea* is the intended result (Mead, 2016). Throughout the Kaupapa Māori unit interviews take-utu-ea was seen in the three different forms stated here.

B01 outlines the breach of tikanga (take) when expressing an important example on Māori experiences and the health system in the hospital.

> *"And feeling rushed like they are…. that's a common thing that they tell us, that oh that other person or that other nurse or whoever rushed us and we didn't have time to even gain insights into the information or understand it clearly or ask questions or we had a brochure thrown at us and told to go and read it and we didn't really understand…"*
> *"Yeah, and that's why, I get really angry because our life expectancy isn't as high as non-Māori but umm services aren't available...you know the number of times that I've tried to find support for a person under 60...that is so hard and that's because lots of services are only available for 60 plus…"*

B02 outlined take-utu-ea in a different way to the other KMCR as they suggested there were no breaches within their service and all participants had equal access to CR. The state of ea was always achieved.

> *"It's not really an issue, there's no, I can't see that there's any inequality. A few years ago I worked with our Māori health unit and we couldn't identify any issues…"*

> *"...No, because we have such a small population of Māori here so I think only 18 percent of our population identify as Māori.."*

> *"...Because of our low social deprivation score the incidence of heart disease in this region is the same as Māori…"*

Theme Five: Tika

Tika, which in Māori refers to what is correct and right in any given scenario, serves as a general basis for tikanga (Mead, 2016). This theme was evident within the KMCR interviews.

B01 states that they also do accept non-Māori into their CR service however, prioritise Māori but outline that non-Māori are not just excluded.

> *"No ummm I mean we accept non-Maori referrals but that's if the capacity allows umm we do prioritise Māori first like if we have a 100 of them we will put Māori at the top and yeah, it's simply because we are funded as a kaupapa Māori organisation to try our best to gain equitable health outcomes and if we're servicing non-Maori then what is the point…"*

B03 demonstrated the lack of tika that was shown within engagement for Māori participants and also when staff were being pulled away from their own jobs when covid was happening.

> *"You were being redirected to do other jobs umm yeah people got redirected out of their contracts continually for a good two and a half, three years so um yeah, these last 12 months have just been getting back into one job/contract and being able to concentrate on it a bit better without being pulled out…"*

> *"Umm yeah, because what they get, like I say, what they get at the hospital is umm some of their resources are actually really good but yeah some of their resources I don't think they check to see how well their resources work or whether or not it's the right resource for the person and each person, each individual is different…"*

B02 also made a very controversial statement that can be seen as tika with them believing there is no real issue between Māori and non-Māori enrolments for CR and inequalities.

> *"It's not really an issue here, I can't see that there are any inequalities in enrolling and referring of Māori into CR…. a few years ago I worked with our Māori health unit and we couldn't identify any issues…"*

Theme Six: Whanaungatanga

Like the participant data, the tikanga theme of whanaungatanga emerged within the KMCR interviews. Whanaungatanga is defined as the expectation of people gaining support from both close and distant relatives, the collective group also looks to its members for assistance and support (Mead, 2016). This is a cornerstone of tikanga that describes common experiences.

B01 outlines how important forming relationships and trust is with their participants and creating that whanaungatanga space. They state the programme is not just one standard approach and once whānau know about the initial programme it can be a snowball effect and they start referring their own whānau members.

> *"Yeah maybe later, it's sometimes just about establishing that trust and forming those relationships, fixing the whanaungatanga rather than just focusing on our CR you know and just solely on that, it's more holistic…"*

> *"That was through the social worker...dropped the kai package off, dropped the information off. He didn't end up being in our service but he was really grateful for just that little bit of support even though he didn't end up coming into the service. So, you know, it's what our whanau need…"*

> *"Exactly, and what often happens what I've noticed, is that we will engage with a particular patient or whanau and the next minute their referring throughout their extended whanau and so you end up having like you know six or seven different whanau members that are cousins or relatives or friends of the ones that originally started which is quite good…"*

> *“Yeah tailored around the whanau needs really so if they need repetition we will do the lesson again to reinforce or they might want the whanau to come and listen so we will repeat the lesson again…”*

B03 also outlined the lack of whanaungatanga and how a client of theirs did not feel supported due to the lack of communication from the hospital. However, the trust they have with the Kaupapa Māori shows through as well.

> *“She’s been in hospital about three weeks now, she’s just waiting to hear from the surgeon exactly not when because they’ve given her a date but they need to talk to her about the process of you know the pre-op and all that stuff, but she just wants to go home, she just wants to go home and rest at home before she goes in for the surgery and I said to her and she goes can’t you come and check on me and report back to them…?”*

B03 however, outlines the positives of their service and how it leads to self-referrals and that of other whānau members too.

> *“Yeah, some of them are hearing from others about the service or they come, I think some of them look on our website and realise that we have a cardiac and stroke rehab service and so they want to talk to a cardiac nurse or they’ve spoken to a whanau member who have talked about the cardiac nurse…”*
>
> *“And that’s what you’ll find with most iwi providers, I mean I’ve worked with a number of different iwi providers through my years of nursing so I’ve had 30 odd years of nursing and 20 of that has been out in the community working for predominantly iwi providers and every service does it in their own way but we are pretty much are whanau focussed and when you go into a house it’s not working with the individual, it’s usually working with the whole household…”*

Lastly, B04 also shows how they demonstrate the use of whanaungatanga within their CR services to their participants in terms of communication and engagement.

"It's that one on one mostly you know and that's what I do…. Initially when I get that referral it's that first appointment like you know, it's at their home and it's really just building that relationship and stuff…"

"Yeah, and I think it makes it easier to Patti because particularly with a lot of the Maori you know people that come through and because I'm Māori too so like it's easier to connect as well and a lot of the time they're not you know…. Particularly with our GP patience like we've got so many locums you know and you're not seeing the same GP like as it used to be so then they're not willing to engage with someone who's just going to properly turn their back in five minutes to do their notes and things like that, so I think being Māori with the Maori anyway in particularly I can make that connection you know…"

"Yeah and we've got the commodities as well particularly if they're from up here like I'm from up north as well so it's easy to even connect and to even find that we might be related in some way…"

"But we have had yeah, a lot of people like refer their friends to come you know to the classes as well…"

Chapter 5: Discussion

Introduction

The following chapter outlines the key themes that emerged from the analyses of the interview data in relation to the recruitment and retention of participants into P2CR. The data gathered from the participants were analysed to understand the themes that emerged in relation to the literature and study aims.

The study set out to explore whether a tikanga based framework would encourage the enrolment and retention of more CR patients into the programme, particularly Māori. However, no Māori enrolled in the programme, although they were allegedly referred to it. The absence of CR patients, who were Māori, in this study offered the opportunity to understand how non-Māori perceived this type of programme and how it could fit into a mainstream health system and improve inequities.

The study data collected was interpreted via a Māori world view even though there was a lack of Māori participants interviewed. The absence of Māori presents a defining picture for the representation of Māori across the health system in Aotearoa, as the system is said to be committed to reducing health inequities (Goodyear-Smith & Ashton, 2019). Problems with access to care continue, with the system not delivering on promises of equitable health outcomes for all populations (Goodyear-Smith & Ashton, 2019). However, Māori voices were included through the kaupapa Māori unit interviews and also the researcher and supervisor being of Māori descent. This would help to understand CR processes from a Māori viewpoint. Some similar themes emerged from this data that aligned with the participant data. Hence, non-Māori participant data and the kaupapa Māori CR unit data will be discussed concomitantly in this chapter. The dominant themes that transpired are discussed in more detail;

- The nature of clinical relationships and its impact on services to Māori.
- The marginalisation of Māori in the healthcare system.
- The role of communication.

The nature of clinical relationships and its impact on services to Māori

> *"....they just gave me my discharge letter and sent me off" (B03).*

This is a strong statement from a patient to a staff member of one of the KMCR. It outlines critical gaps in the clinical relationships between hospital staff, patients and CR programs. There seems to currently be a disconnect, hindering Māori patients' access to vital post-discharge or phase two support as they are having to seek out aftercare and refer themselves to CR services. In contrast, B03 also outlined how participants self-refer. They stated some participants are hearing about their service from others taking part more so whānau members who have spoken of their cardiac nurses. From here they are heading to the services website to see there is a cardiac and stroke rehabilitation service. They are then wanting to speak to them and understanding P2CR better.

Within the program, participants (A05 & A06) shared positive experiences, stating that it aligned with their health needs while fostering an environment of enjoyment and laughter - a balanced state of noa (balanced or safe state).

> *"I understood more about where I was heading and what was going on, which was…"*
> *"There were also a few laughs along the way, this sort of thing you know. No, I thoroughly enjoyed the seminars…"*

This provides an insightful perspective of tikanga being positively received by non-Māori and highlights the critical role of clinical relationships and the incorporation of cultural sensitivity for Māori within such a program. Goodyear-Smith and Ashton (2019) states that focusing on strengthening the culture and capacity of a health system will improve inequities, particularly enhancing Māori health service provisions and strengthening population-based approaches. Therefore, with this tikanga approach Māori and non-Māori would both benefit through Māori values and improve the inequities between the two population groups.

Furthermore, participants of the study (A05, A06) went on to state the importance of gaining a clear understanding of their medical journey through support and an inclusive atmosphere within the CR program. This shows the significance of relationships, or whakawhanaungatanga within the group which is a key component of Māori culture to build trust and a sense of community within healthcare systems. This also offers how a CR program can be enhanced by these few tikanga aspects and how it could change the outlook on how Māori may perceive such a program by offering a better clinical relationship with patients and participants.

However, it is vital to acknowledge some of the data revealed a lack of manaakitanga and whanaungatanga. Some of the KMCR referred to this by stating the perceived fear patients had after being discharged with no support and worried they would have another heart attack. Another stated that a common theme was the feeling of being rushed by the hospital staff after their heart event and how they were not able to gain insights into the information they were given to understand clearly or ask questions on the next steps. This was a similar finding to some of the participant data with A06 stating;

> *“ Yes, I was because....in the taking part (in CR) I actually found out more information about me that didn’t come to me from the doctor, the cardiologist, the surgeon or the hospital or anybody”.*

With the KMCR it clearly demonstrates an important example of the experiences of the system for Māori but also that of non-Māori from the participant quote above. For Māori it shows the absence and significant disconnect in building relationships, a critical element of Māori culture. Building of relationships is reinforced by tikanga and cultural values and concepts to ensure engagement with others are mana-enhancing (Wilson et al., 2021). With the lack of these aspects it not only diminishes the patients experience but also increases barriers to their participation levels in CR. The previous qualitative study to inform this study, Kira and Kira (2021) outlined a lack of importance of Māori needs and a lack of Māori HPs in CR stopping them from taking it up or discontinuing the programme. It highlights a perceived lack of processes to consistently incorporate cultural safety and sensitivity. Therefore, it is critical for healthcare providers to undergo training in these areas to ensure more inclusiveness and be more culturally aware of the environments within the referral process and CR programs.

Evidence from Hutchinson et al. (2015) suggests that CR programs designed to be culturally inclusive encourage greater participation by Māori patients. This would help these patients by creating a trust and willingness to engage in these programs. It creates an environment where the individual feels supported and empowered to help eliminate systemic barriers and biases thus increasing participation. Positive experiences from participants (A02, A05, A06) within the study highlighted the impact of a well-run program which generated a sense of mana and motivated them to engage actively with their treatment. Therefore, the design of such a programme outlined in this study is essential to advocate for Maori health needs in cardiac care. With these positive experiences coming from non-Māori the impacts that a programme like this could have on Māori would be hugely beneficial. This then promotes the uptake to CR and helps reduce barriers to attendance and enhance participants overall experience.

As with many health challenges for indigenous people there are clear gaps to address inequalities between Māori and non-Māori in CR. This is evident in this program which had no Māori referrals. Hutchinson et al. (2015) outlines in closing these gaps people should not solely rely on mainstream health institutions but include culturally connected health ideologies and indigenous health workers. One of the KMCR (B03), offered a relevant example (above) regarding the lack of manaakitanga towards a young Māori patient within the hospital from a non-Māori nurse. However, her relationship with the Māori nurse from the kaupapa Māori unit shows that having the right clinical relationship and trust, through such a service can make a big difference to these patients.

> *"I said to her on discharge out of hospital their nurses will come and see you. She said nah I don't want to see their nurses. I asked why and she said because she's mean, she's an old lady that came to my house last time. I said okay we need to sort that and she goes but you're my heart nurse I want you……(B03)"*

Therefore having cultural capability is key to establishing meaningful clinical relationships to ensure CR programs are truly inclusive and supportive of Māori patients. This is stressed by Clark et al. (2015) who stated the need for cultural awareness among health workers is needed to better align with patient needs. A positive example seen within the study was providing the use of a kaiwhakahaere. It can be said that Māori have a wealth of knowledge to be able to contribute to their own solutions and outcomes in health. In the study the kaiwhakahaere engaged with previous Māori referrals to CR, offering them an opportunity to speak about their heart conditions and if they would like to re-join and/or why they may not be ready too. Reasons for declining the offer to return were not recorded; however the use of this practice identifies the importance of allowing Māori patients to voice their concerns and be active participants in their healthcare decisions for future reference. When Māori voices are not heard within any given health intervention it may cause distress as potential components may not align with their cultural needs. This was seen in a CR study by Neubeck et al. (2012) where problems occurred when patients from culturally and linguistically diverse populations were given dietary advice that was not culturally sensitive. This caused distress to the participants and led them to believe that CR was not relevant to them. This indicates how important building these clinical relationships are for health interventions to be successful for indigenous populations.

Furthermore, the KMCR interviewed outlined no support or clinical relationships from hospital staff for any of their patients in CR after their heart events with most having reached out to them.

> *"One guy rang me and said I've been discharged from the cardiac ward ....I had a heart attack but they said oh it was only a little one and then discharged me but I'm scared to do anything in case I have another…." (B03).*

This demonstrates a lack of manaakitanga to patients again in hospital. Participants within the study also said the referral process was long and they did not even know they had been referred. This demonstrates a lack of relationships and communication (to be discussed later) from hospital staff and cardiologist specialists towards their patients.

> *"I think my positive angiogram must have promoted my referral….. I just got a letter in the post which I was surprised at as I hadn't had a heart attack… The letter just said we have received your referral…"*

Therefore, the study emphasises the need for comprehensive discharge plans or referrals which would involve engaging with the patients and forming those relevant clinical relationships needed for them to better understand and have access to the right services.

In conclusion, the importance of clinical relationships, cultural inclusivity and safety with a patient-centred approach cannot be underestimated in CR for Māori patients. Embracing cultural competence, establishing discharge and referral plans with patients and involving them in the processes of healthcare providers and CR units can increase the quality of care, reduce disparities and create more effective and accessible CR programs for Māori.

The marginalisation of Māori in the healthcare system

> *"....it's not really an issue here, I can't see that there are any inequalities in enrolling and referring of Māori into CR…. a few years ago I worked with our Māori health unit and we couldn't identify any issues…." (B02).*

This statement contrasts with the literature and the evidence presented in this thesis. The participant was a non-Māori CR staff member of a District Health Board (now Te Whatu Ora). It highlights the misconception of the belief that all NZers have equal access to healthcare and that the mainstream healthcare system worked well for all. However, the provision and accessibility of healthcare services, especially in specialised areas like CR have been identified to show disparities in addressing the needs of Māori within the NZ healthcare system (Hamilton et al., 2016). For CR the challenges faced by Māori to access this service reflects wider systemic issues. This could be embedded from the historical consequences of colonisation, institutional racism, and inequities within healthcare. This was evident from one of the KMCR (B01);

> *"...often whānau are resistant due to experiences they have had previously especially with bureaucracy and I guess colonial systems you could say…"*

This could offer reasons to why no Māori were referred into the current programme. Further, it was stated by Harwood (2010) that to achieve health equity within CR and broader healthcare areas there is a need to move away from a 'one size fits all' approach that is not working. Issues of accuracy of data, available information and evidence of indigenous peoples needs not being met is increasing these inequalities, with increased rates of chronic conditions (Harwood, 2010). This was quoted by one of the KMCR (B01) stating;

> "*....the structure of the hospital system and sometimes the inflexibility, GPs only offering 15 minute consultants normally and not being able to go beyond that…."*

This scenario defines structural inequities that are built into the system because Māori values have not been considered and this breaches Te Tiriti o Waitangi. Hence, the multiple health-oriented Waitangi tribunal submissions (Te Aka Whai Ora, 2024). The bias and the inefficiencies may be a logical explanation why there were no Māori referrals into the CR program during this study relating to breaches of Te Tiriti o Waitangi. This was evident in the study by Kira and Kira (2021) stating promotion of CR to Māori at the hospital level is poor with comprehensive outpatient support being absent.

Thus, the Kaupapa Māori nurse (B01) outlined this issue that may lead to the marginalisation of Māori within the system. The barriers indigenous people face by being rushed and information not being understood particularly on what CR is. Therefore, many do not take up CR. However, she stated their service was able to stay for one, two hours within their sessions until they fully understood and answered every question needed so they felt comfortable about CR and to attend. She also went on to say they deliver everything to the doorstep of the whānau in their home to remove barriers of transport, offering a wrap-around service not only discussing CR but identifying psychological, mental, physical barriers too. In doing this, this type of service is taking a holistic view and increasing their chances of whānau attending the service decreasing inequalities and marginalisation that whānau feel. This shows that integrating Māori concepts and practices within healthcare delivery is essential for culturally responsive care. Amplifying Māori-driven healthcare strategies is crucial in eliminating the marginalisation of Māori in CR and broader healthcare services.

Furthermore, many studies have found that Māori experience large amounts of discrimination within health. Māori are three times more likely to report unfair treatment attributable to ethnicity (Ministry of Health, 2015). There are also reported instances of avoidable complications and inadequate care leading to adverse health events among Māori who seek healthcare, including CR (Wilson et al., 2019). Another one of the KMCR (B03) had quoted this insufficient care for Māori patients particularly with the referral and follow up systems of CR.

> “*....I’m blown away, I’ve never worked in a service where the hospital has really neglected patients on follow ups… I’m not sure if it’s just Māori but it seems they are the ones I'm working with and the ones discharged and their not a) got support in place & b) have no idea what to expect or what’s going on…”*

This demonstrates the lack of manaakitanga that hospitals seem to have for the referral process. Without this, Māori feel a lack of respect towards them and no kindness in how they are treated which would definitely make them not want to be referred to a CR programme that could help them for the future and gain the support they need. There were also a few participants (A05, A07, A02) from the study that also identified the lack of follow ups and how the referral process was.

> *“...it just would be good to have a few check-ups from a cardiac professional…. Just in case there was something that was malfunctioning in some way…”*
> *“...And it takes so long for these programmes to go…”*
> *“...it took a while for it to happen (to get referred to CR and attend)....”*

With non-Māori voicing this it says a lot about the system and potential impacts it could have on Māori being in more vulnerable positions than non-Māori. These referrals and follow ups clearly are not being catered towards all NZers in the right way. One of the KMCR (B01) believed it could be due to previous experiences some of their whānau had with the NZ health system to why they do not go to hospitals, GPs or secondary services like CR. These experiences for Māori involve being less likely to have HPs explaining medical information in a way they understand and also spending less time with Māori patients compared to non-Māori (Espiner et al., 2021).

This is a major concern for indigenous people where they feel marginalised and do not trust their own health system suggesting much change is needed. Came et al. (2021) outlines colonial health systems and policies imposed on indigenous communities worldwide (including Māori) are entrenched in the NZ healthcare infrastructure. Therefore many systematic challenges are seen for Māori within healthcare including CR due to colonial legacies failing to adequately address health inequities, sustaining disparities and marginalisation in health care outcomes between Māori and non-Māori.

Another point to make, relevant to this theme is how some participants who were interviewed quoted the lack of uptake in CR from others. Participants (A05, A07) were very surprised at this and were pointing to personal responsibility of these people rather than health system inadequacies.

> *“...There’s a lot of barriers but there’s also I think there’s…properly a lot of arrogance by people of how important it is and how much they can actually do to help themselves…”*
> *“...anyway she came along to the first one but she said oh no she’s going home to Taihape and she said I can do all these things you know and I thought well I don’t care if I was living in Taihape I would have come down to them because they meant that much to me…”*

For a non-Māori voicing arrogance around this shows the lack of understanding towards the challenges and barriers faced for others on why they are less likely to attend CR.

NZ hospital selection processes can unfairly influence patients' opportunities to benefit from evidence-based health care programs like CR with vulnerable groups less likely referred (Turk-Adawi et al., 2014; Williams et al., 2010). Therefore there is much more to the issue for Māori. Similar to these participants, one of the DHB units (B02) that was interviewed for the study also showed a lack of understanding of the marginalisation Māori in the community face. They suggested there was equal access with no inequalities within this area for them.

> *"...No, because we have such a small population of Māori here so I think only 18 percent of our population identify as Māori.."*
> *"...Because of our low social deprivation score the incidence of heart disease in this region is the same as Māori…"*

While these statements are true, there is more to the issue than these simplistic explanations. It does not mean there are no inequalities between Māori and non-Māori within CR. Like many other regions in NZ, they are potentially lost through the cracks of the health system due to forms of marginalisation and few Māori are reaching CR. Furthermore, another Kaupapa Māori unit (B04) had CR funding taken away. The CR nurse stated the CR programme was still very much needed with many referrals still being received. Therefore, they continued however they were limited on what they could do for participants and had limited capacity. Cutting funding for such an important area of health for a Kaupapa Māori unit is likely increasing inequalities within CR, marginalising Māori further.

Efforts to amend these inequalities require decolonizing health policy and fostering genuine partnerships grounded in the principles of Te Tiriti o Waitangi. The need to support and trust Māori knowledge and their insights is essential to overcome the complex challenges of health inequities in Aotearoa (Came et al., 2021). There have been many calls for policy reform and change. This is evident with the recent creation of Te Whatu Ora - Health NZ and having a Māori Health Authority (Te Aka Whai Ora to combat Māori health inequalities specifically). Māori will gain a voice within how policies are created with a Māori worldview lens. This positive move for Aotearoa's health system will help achieve benefits not just for Māori but non-Māori too.

Advancing Māori wellbeing doesn’t just benefit Māori but the whole of New Zealand. For this to happen specific collective decisions must be aligned with approaches centred around Māori that are welcomed and appreciated to not only aid Māori but non-Māori too (Lloyd, 2018). This statement was evident in the study with positive feedback from non-Māori with the underlying tikanga themes. Participants (A06, A04, A03) felt strong connections, formed relationships and experienced much whanaungatanga with the programme being very welcoming and friendly. They also found connections with other participants by talking to them and seeing they had gone through a similar situation to them which made them feel a sense of inclusion by hearing others stories. Therefore, non-Māori feel welcome by the use of tikanga principles. This is creating a sense of community for this group and would heavily benefit whānau Māori if they were involved in such a programme as it would create a huge sense of belonging for them.

To help reduce health inequities and marginalisation for Māori in the health sector, health policy plays a critical role. Plans need to be put into place on what works best for Māori where Māori evidence does not exist and funding provided to develop this evidence (Came et al., 2015). This would benefit all health areas for Māori including better establishment of CR programmes. This is where the strength of Te Whatu Ora and the Māori Health Authority can play an essential role in developing this kind of evidence. “When we all work together - Government, Māori business and whānau, and our partners in the wider community - all of our aspirations stand a greater, more powerful chance of truly being achieved.” (Speech by Hon. Nanaia Mahuta, 2018). The underlying tikanga themes that are embedded into the ThinkHauora CR programme for our study help to promote CR to Māori. However, Māori were unable to experience these as the referral processes had failed them due to the mainstream healthcare systems in place at the hospitals. Therefore, with the establishment of the Māori Health Authority (Te Aka Whai Ora) it could align better systems for Māori voices to be heard to better programmes like CR.

In conclusion there is a need to eliminate factors influencing disparities in CR uptake and inform interventions that promote equity for Māori in such programs. This can be achieved with changes in the systematic structure of the health system policies which are currently being undertaken with the new health reforms in Aotearoa with the introduction of Te Whatu Ora. This is a positive step for Māori health and CR in trying to overcome the long history they have endured in health due to coloniality and systematic racism which has caused much of the marginalisation and inequities in Māori health today.

Another positive step is the NZ cardiac society has updated core components of NZ secondary prevention. They have been developed to update previous guidelines for P2CR (Liew, 2018). In having these kinds of guidelines for CR in Aotearoa it offers a direction to emphasise more holistic, patient centric approaches which aligns with Māori cultural values. Thus, this would offer a way forward to reduce the marginalisation of Māori within the health sector and CR. This framework and the KPIs developed would allow CR programmes to encourage a uniformity of care in the country (Liew, 2018).

The role of communication

Communication is critical to participant engagement. It is pivotal to the success of recruiting and retaining participants into CR programs, particularly Māori. When communication is used effectively a program’s benefits are able to be understood correctly. This would contribute to increased mana and manaakitanga for participants, fostering a sense of appreciation for the program’s potential impact. However, due to the absence of Māori participants in our study, it raises vital questions about the acceptability of communication strategies that influence recruitment and retention rates particularly from hospital discharge to CR program enrolment. Lack of Māori patient enrolment in CR indicates that during this critical transition, marginalised sub-groups such as Māori are slipping through the cracks.

For communication to work effectively it needs to operate at both micro and macro levels. Personal interactions between hospital staff, CR staff and also amongst each participant of the CR program is essential. It contributes to them feeling informed and included. However, at this level it was lacking between hospital staff and patients in terms of referral to CR in our study as A03 recalled;

> *“There were lots of people all talking and I was either sort of with it or not. So yeah vaguely recall but got the general picture of what was going to happen ....”*

An indication to how potential participants could be missed with no real structure to communicating CR programs to participants who have just gone through a traumatic event and/or just come out of surgery. Some participants were not clear on how they were referred, as some believed they were spoken to while others thought they just received letters or phone calls. This clearly shows the lack of systematic structure of communication from the health system to convey the right messages and understand the full benefits of this program when referring participants. This was also a similar observation from one of the KMCR that were interviewed for the study. The CR nurse explained that they had not had one referral from the hospital in the last 12 months she had been working there, with all referrals coming from external providers or self-referrals. She was astonished by this revelation as she had never worked in a service that had really neglected follow ups of participants from the hospital, explaining that she had worked in the sector for a long time. She stated;

> *“I’m not sure if it’s just Māori, but you know it just seems to be they’re the ones I’m working with but they’re the ones being discharged and their not a) they’ve got no supports in place and b) they have no idea what to expect or what’s going on…” (B03)*

Therefore, this lack of communication is very detrimental for the recruitment of participants into CR, particularly Māori as seen by the KMCR that were interviewed for this study.

Two of the other KMCR also identified similar patterns but in relation to GPs not referring. B04 stated whānau find it hard to make a connection with GPs due to the fact they have so many locums (temporary clinicians) coming and going. Patients aren't seeing the same GP like it used to be. Whānau are less willing to engage with doctors who are likely to turn their back on the patient within five minutes to do their notes. Therefore, the communication and trust is lost immediately. Subsequently the value of the visits, trust in the system or their doctor and somehow be referred to secondary programs like CR. Elers (2014) states Māori are reluctant to ask questions even when experiencing substandard care which illustrates clear obstacles confronting them access to health services like CR which could relate to institutionalised racism also. Māori feel ill-informed and powerless within the health system which is described as insensitive, judgemental, rude and disrespectful along with poor communication (Elers, 2014). A KMCR (B01) outlined this with how GPs do not necessarily refer their patients to CR;

> *"GPs don't refer necessarily and patients don't even understand a referral to a secondary, to another specialist whether kidney, cardiac, cardiologist…So, the patients would be questioning oh why didn't my GP refer me earlier and sometimes we don't know the answer to that and umm we just support that patient with that even to diabetic appointments, podiatry etc…"*

The benefit of the KMCR valuing and applying tikanga Māori above that of the health system policy is that they can then support and engage with patients in the right language and understanding. This forms relationships and trust between them. This in turn helps to improve their health outcomes and allow them to benefit from the CR programs and other health programs they have on offer.

There was however positive communication between the CR program staff and the CR participants, as well as between the participants themselves underpinning the connections the tikanga aspects created. This is in spite of the fact that the staff were all non-Māori. Literature outlines that benefits from CR enabled ongoing participation due to seeing participants in the same boat as them providing increased confidence, shared experiences and mutual support with the added bonus of knowledgeable and encouraging programme staff that helped sustain access to CR (Clark et al., 2013). By creating this positive level of communication it created a safe environment and a feeling of inclusion where they felt understood, giving a sense of whanaungatanga due to the support and relationships formed with the team and other peers in the programme;

> *"Yes, they were brilliant, they definitely had our interests at heart (Think Hauora Staff) (A02)".*

> *“To see all these other people there at the seminar, to have the speakers, very knowledgeable speakers on all sorts of topics and also the people around, it was brilliant…” (A06).*
>
> *“People who have basically been through the same thing as me and you know you’re not alone in this world sort of thing….” (A03).*

Therefore, participants' awareness and engagement depends on the effectiveness of communication, highlighting its critical role in participant outcomes. Neubeck et al. (2012) reported on a number of studies that patient-physician communication was viewed as critical in the decision to participate in CR. However, it was perceived that they did not always communicate well, either with them or with other healthcare providers. Neubeck et al. (2012) also found that some patients were excluded from CR due to hospital inclusion and exclusion criteria but more so due to poor communication between the hospital and patients who required it. This meant long delays in being able to participate in CR.

The role of communication competence in health care systems is paramount for all parties involved no matter the health challenges or population. However, Māori-specific health outcomes rely heavily on communication especially from mainstream health systems to better understand their languages, systems and structures. There is a need to transcend language and incorporate a degree of Māori culture within a colonised framework that is not well suited to this population. One participant from the study (A06) outlined how much of the information was kept personable and it was not incomprehensible clinical information, therefore engaging in a language that suited the participants. This participant also found that by taking part in CR it helped him find out more information about himself that did not come from the health professionals like doctors, cardiologists or the hospital. This shows a form of interconnectedness of communication within the CR program that is needed to create a holistic approach to informing and engaging these participants to benefit from the programme. Again, we are unable to relate these findings to Māori as there were no Māori participants. However, it is supposed that a program based on tikanga would result in benefits for Māori. Although, there were Māori voices within the study to better understand this from their point of view via the KMCR.

B04 found they were able to communicate, connect and gain trust through the fact that the CR nurse was Māori;

> *“....particularly with a lot of Māori that come through and because I’m Māori too so like it’s easier to connect as well and a lot of the time they’re not you know (GPs)…so I think being Māori with the Māori anyway in particular, I can make that connection you know…”*

This is such an important communication platform to have for these CR programs with a relatable nurse who understands them and their culture. Hutchinson et al. (2015) identifies that the role of nurses and their interaction with Māori is essential to improving Māori health by eliminating and exposing prejudice, while advocating equity of health care for Māori. Therefore, this includes the way these nurses communicate to Māori in CR and allowing them to trust them in the referral process in hospital and then into the CR program they are enrolled in too. This outlines the macro level of communication where both the hospital and CR programs need to be communicating effectively so referrals are not missed and overlooked. It was seen in our study and others that the lack of interconnection between the two services, hospital and CR unit, is ineffective communication and leading to participants not being referred or misunderstanding the referral process. Hutchinson et al. (2015) discovered through their study that nursing staff had the majority of contact with patients; however, very few nurses were discussing CR programs with them. This could be an evident issue within our study with no referrals of Māori and the communication being substandard to what is needed particularly for Māori. However, the communication within the CR programme in our studies showed the staff had excellent communication and was very well received by participants having positive experiences.

> *“...the information your people were imparting was very good, to the point and it certainly struck a chord with me all the way through…” (A06).*
> *“Yeah ummm they kept us informed and they were inviting as far as being there and the check-ups on like blood pressure and pulse and the interview, answering questions about what I was doing and managing that was all helpful to know…” (A04).*

This shows that the CR staff in our study had excellent communication with the participants which allowed them to feel welcomed and invited into the program. This creates a safe place and balanced environment to be in by being and feeling supported by the CR staff. The CR nurses of one of the KMCR (B04) also outlined they created a safe space and used one on one communication in order to build relationships with their participants which helped to maintain these participants;

> *“It’s that one on one mostly you know and that’s what I do…Initially when I get that referral it’s that first appointment like you know, it’s at their home and it’s really just building that relationship and stuff…”*

Another form of communication that can be utilised to help refer participants into CR are the resources used by the hospital such as posters/pamphlets. This material promotes CR and allows future potential participants to know about it. For Māori particularly having such resources within their language of Te Reo Māori would be of great importance so they were able to understand the benefits of the programme. Bramley et al. (2004) states inequities within CR could be potentially reduced if more Māori are communicated the right information and access to CR. However, within our study the KMCR (B03) revealed that some of the resources participants are provided do not always align with them;

> *“ Ummm yeah, because what they get…like I say, what they get at the hospital is umm some of their resources are actually really good but yeah some of their resources I don’t think they check to see how well their resources work or whether or not it’s the right resource for the person and each person, each individual is different…”*

Therefore, communicating in the right language is very important, whether it be from a hospital or CR staff member or via the use of posters or pamphlets. It is also important to ensure that medical information is offered in a simple way that can be understood by those without medical training.

In conclusion, communication gaps can be seen in CR between hospitals and communities that could contribute to delays in CR participation. Communication is a central pillar to the recruitment and retention of Māori participants in CR programs. Establishing cultural competence, personal connections and empowerment through communication is critical. Tikanga established within the CR program of this study demonstrated a high level of communication through being personable, inviting, comprehensible and timely. By addressing the communication gaps with these aspects, particularly within the referral process will allow Māori to gain an inclusive and more accessible pathway into CR.

Strengths

A major strength of this study is the inclusion and premise of mātauranga Māori values utilised, specifically tikanga. By basing the CR program in tikanga into the study it adds knowledge heretofore unknown. Given the limited information about CR and Māori, this work is necessary. Furthermore, to our knowledge, no study has undertaken a Māori cultural enrichment of a CR program, which adds to the contextual novelty to the rich data that was drawn from the interviews of both the participants in CR and from the KMCR. These results will be added to previous work to help focus future studies within the area to expand its knowledge base.

The study intended on gathering valuable information around CR and Māori where limited to no information is known. However, no Māori were referred into the programme. This did not limit the study's ability to still collect and analyse data to understand the nature of CR service design, implementation, monitoring and evaluation for/by Maori. The lack of Maori inclusion in CR became a data point to analyse which contributes to the rationale for declaring an urgent need to address inequities regarding how Maori are positioned within the NZ health system. As the facility/hospital level data indicated what would improve efficiencies and outcomes for patients, specifically for inequitably treated sub-populations such as Māori.

Another strength of this work was being able to interview non-Māori to observe how the tikanga methods influenced them. The resulting positive effects indicating this method could provide mainstream healthcare and CR with a tool to close inequity gaps. Moreover, a strength could also be seen by having the KMCR within our study offering a way for Māori voices to be heard. They also offered strengths by having CR nurses who were Māori. This allowed us to see how they offer more relatability to participants that are willing to be recruited and retained within the CR program. They are able to communicate in a way that is appropriate to this community, forming trust and building relationships with them including with their whānau too. B04 outlined participants would be referring their whānau and friends into the service because of the positive impact it was having on them creating much whanaungatanga. Therefore, a great way to demonstrate the strength of having them in the study to be able to note this kind of data. Lastly, the methodological novelty of it being a qualitative study is a strength. It allows us to take the study to the next level in this field. Offering deep, rich data to be collected from the participants by encouraging and exploring further answers to questions they provided.

Limitations/Disadvantages

One of the biggest limitations to the study was the fact that there were no Māori referred into the CR program. Therefore, this would have had impacts on the results by not being able to see the influence the underlying tikanga could have had on Māori participants. The study could only interview non-Māori who attended the program which is also a limitation by then allowing non-Māori to be the voices for Māori in how they portrayed the study. Some of the results that were found can be aligned with some international studies however, they cannot be generalised due to the limited number of participants and geographical location of the study. Furthermore, the study did encounter a few delays due to the lockdowns around covid. It took some time to recruit participants and then start the CR programs, therefore the data collection was delayed by a number of months. With this challenge being faced it created limitations around staffing and reliable information. Nurses within the CR area were getting redeployed to help with covid related health issues like vaccines. There were three changes in staff management noted during the three months we were within the organisation. This caused disadvantages to the study due to having to re-explain it to new staff who came in and also reliable information was not able to be handed over between these staff turnovers. This included information such as participants' referrals, contacts with patients, and attendances. This could also be an indication on referral issues not just at this time but also at other times as it was noted by a Kaupapa Māori unit, staff turnover was also an issue for them. B01 stated when staff left issues were created around health care resource capacity. This involved the inability to actually take on more patients due to staff coming in and out. The Kaupapa Māori unit tried to regulate this as well as they could but it is a huge issue for them. One of the main issues impacting this capacity is pay parity challenges Māori providers face. In comparison to nurses in the mainstream health system.

Lastly, limitations that involved the researcher were logistical. The researcher was based in Dublin, Ireland therefore the time difference was an issue at times in terms of trying to contact the participants to be interviewed. The interviews also took place over the phone so it was hard not being able to make a connection face to face with them and seeing expressions. It was also the researchers first time doing interviews and collecting data therefore relevant information could have been missed. This could have been from questions not asked in the right way and being able to expand questions in order for the participant to further their answers to the question to gain deeper information for the study.

Recommendations

This study was an observation of a phase two secondary prevention cardiac rehabilitation program in a regional hub. The program was innovatively based on tikanga and had all the elements of a P2CR program based on the NZ guidelines. We were interested in Māori and non-Māori responses to what was essentially a mainstream health program based on Māori values. When no referrals were received, and subsequently no Māori enrolments, non-Māori responses only were collected. Māori views were obtained through the interviews of Māori health professionals working in kaupapa Māori CR units. It is obvious there are structural processes that need to be investigated and redesigned. The current re-structure of the NZ health system is one step towards less inequitable outcomes. This research can be one point of reference for that restructure. Thus, the following recommendations below are suggested after the collection of data from our study.

Recommendation 1: Clinical relationships

The theme of clinical relationships was found to impact on Māori participants' referral and retention. Poor clinical relationships with patients can contribute to a lack of whanaungatanga, which is a key tikanga aspect. Normally, enhancing cultural safety and training through development and implementation for healthcare professionals is recommended. We advise an additional recommendation and that is to change the system to ‘allow’ healthcare professionals to undertake cultural safety. Standard healthcare system policy and KPI’s are to transit through the system e.g. hospital bed stay. This limits interaction time with every patient. Some patients need more time, others less so. If the system allowed staff to take adequate time to build a relationship and ensure a patient is aware of treatment knowledge and expectations, this should lead to less confusion and ultimately less inequality. We have shown that Māori culture values are beneficial to non-Māori also, therefore the application of tikanga can be accessible to Māori and non-Māori healthcare staff. A tool that could be utilised and focused on is the Hui Process and Meihana Model, as outlined by Pitama et al. (2017). It would help to emphasise culturally competent principles that healthcare workers can integrate into their practice in both hospitals and CR services. This would help to improve understanding of Māori cultural values and practices to foster better clinical relationships, whānaungatanga and ensure culturally responsive approaches. Continued cultural competence training would help to also address potential barriers for Māori offering a more inclusive environment. With such clinical relationships it is important to note the essential component communication has to forming these positive relationships.

Recommendation 2: Communication

Another theme that emerged in the study was the importance of communication. A recommendation to enhance this and to help recruit and retain Māori participants into CR is the use of tikanga practices. Positive effects have been shown by promoting and incorporating tikanga practices in other healthcare areas faced by Māori. The inclusion of these would contribute to positive participant experiences that align with cultural aspects important to Māori, which was outlined by the KMCR. This would help strengthen the communication pathways and allow participants to clearly understand their heart condition and be able to identify the next steps in their treatment. It would create a safe space through tikanga for participants to communicate effectively. It would establish a clear and culturally sensitive communication route between hospitals, healthcare providers and Māori communities. As emphasised by other studies effective communication is crucial to ensure Māori receive timely information about CR reducing the likelihood of individuals being missed. This follows on to the recommendation of community engagement, education and promotion for CR services.

There is a need to develop community engagement strategies and promotional campaigns that increases awareness of CR benefits within Māori communities. As suggested by Came et al. (2021) with increased awareness it will help to address referrals to help minimise potential barriers to enrolment and encourage proactive participation among Māori whānau in CR. Further to this recommendation is having an increased collaboration with Māori Health Providers like the KMCR. Fostering these partnerships will strengthen referral processes and improve cultural safety which would enhance the integrity of CR programs for Māori, increasing their acceptance.

It has been found that guidelines for CR programmes inform best practice. Currently, there is little information existing in Aotearoa about the structure and services provided by CR and how they are delivered in respect to national based guidelines (Kira et al., 2016). It has also been found that there are large variations in what is provided between DHBs in Aotearoa. The lack of standardised criteria to allow for reliable evaluation of CR service performance is needed (Stewart, 2016). The best practice guidelines in NZ are from 2002 therefore, requiring a much needed update to offer the most beneficial best practice evidence to enhance CR for Aotearoa e.g. the evidence based around automated referrals for the health system including CR.

Recommendation 3: Address the health system

Another emerging theme of this study was the marginalisation of Māori in the healthcare system. It is therefore important to note the recommendation of needing to address systemic racism and colonialism. It is essential for the healthcare system to acknowledge the challenges CR services face that are derived from broader historical and social issues. By addressing these it would allow more equitable and culturally responsive healthcare within CR services for Māori. To help with this it is vital to integrate indigenous health workers within CR programs. This will help to foster strong relationships and trust between participants and staff as highlighted by Field et al.

(2018). These workers would add to the necessary need for cultural safety and offer a way to bridge the gaps between mainstream health services and Māori participants in CR programs. Another recommendation that would help to overcome the marginalisation of Māori not only in CR but the healthcare system is the need to advocate for policy changes. This would promote equitable access to CR for the Māori population and would help address systemic issues, ensuring improvements in Māori referral and retention rates.

With the referral process seen to be problematic not only in this study but previous studies of CR for indigenous populations a recommendation would be around systematic changes to enable automated referrals. Creating such a system that tracks and audits referrals will prevent Māori individuals being missed and all have an equal opportunity to be referred to CR services.

It would ensure effectiveness, reduce disparities and align with other studies on recommending this too. Thus, the need to establish continuous monitoring and evaluation systems to understand impacts of implemented changes would identify areas for further improvement. This offers ongoing assessment to ensure intervention effectiveness. This could also include the development and implementation of national guidelines for CR to ensure a standardised process for referrals and program delivery. Thus, allowing equal access to CR and gaining the full benefits of the services regardless of cultural background which would reduce disparities with such standardisation.

Recommendation 4: More research

An essential recommendation that is hugely important is the need for future research within this area. This study along with others outline the need for future research being essential to the uptake and improvement of CR particularly for indigenous populations like Māori. There is a need to further investigate the causes of the continued challenges these populations face on referral and enrolment into CR. This would facilitate ongoing improvements for CR programs.

Recommendation 5: Assess with tikanga-based programs

Lastly, it would be highly recommended to offer access to more tikanga-based CR programs like our study. It is evident within the study that it had some form of positive impacts on the participants who were non-Māori. This was seen through the positive feedback we received from the participants from the welcoming into the programme, to the knowledge they gained about themselves and their heart conditions. Therefore, shows that the uptake of cultural values and beliefs into a mainstream programme can have positive effects not only on Māori but non-Māori too and can be adapted to a more universal approach by using our culture. Tikanga can be about centring people and acknowledging who they are by valuing their perspectives in life. This is what can be offered from a tikanga-based program. If Māori were within the programme the positive outcomes may have been more. It would be beneficial to create some form of guidelines to include how tikanga aspects like the following ones used in this study can be included into all CR programs in Aotearoa to gain the relevant benefits.

Recommendation 6: Policy

There is the need to highlight that the health system is currently undergoing a reform which is a significantly positive move for Māori. This will help to try and overcome health inequities they face in all health challenges including CR with the establishment of a Māori health authority (Te Aka Whai Ora) in this reform. It was recognised that different people, with different levels of advantages required different approaches and resources to equitable health outcomes (Te Whatu Ora, 2024). The spearhead of the reform was also through the fact Māori were not able to exercise tino rangatiratanga in the design and delivery of primary health care (Te Aka Whai Ora, 2024). Therefore, this has allowed the health system to start to align better with Māori and move in the right direction to allow Māori voices to be heard.

However, just before the hand in of this thesis it was announced that Te Aka Whai Ora will officially be disestablished by June 30 of this year by the current government. This is a major step back for Māori health and it will not offer the benefits it was set out to do in decreasing inequities for Māori alongside Te Whatu Ora. The disestablishment of this recent reform would take away the gains already made. There is a need for it to be advocated for as it will achieve many benefits for Māori. Therefore, it is important to note a recommendation based around policy. The need for a positive policy recommendation in order to reduce inequities for Māori within CR and all health challenges.

Conclusion

This study was an opportunity to investigate how the incorporation of a tikanga based approach to a CR programme would affect attendance rates, particularly for Māori. This approach has allowed the researchers to explore ways it could help reduce health inequalities for Māori. The study showed the significance of investigating the inclusion of Māori culture within mainstream CR programmes.

The original aim of the study was to gain insights of Māori participants who attended the intervention and if it encouraged more Māori to attend. However, no Māori enrolled within CR during the time of the intervention therefore this was unable to be considered. Thus, the decision was made to investigate how this approach was experienced by non-Māori with Māori voices being heard through the recruitment of KMCR.

The main findings of the study offered positive experiences for non-Māori participants, with a tikanga approach seen as acceptable for them. It was found there was a need to focus on the referral and recruitment processes within the health system for CR as this area was potentially why no Māori were included within the programme. Creating a te ao Māori lens for CR to integrate into the mainstream health system allows Māori to have trust in the system. This is evident due to this framework being accepted by non-Māori within this study. Improving outcomes for Pākehā does not always necessarily improve them for Māori, however the reverse is true (Lloyd, 2018). Thus, improving Māori wellbeing through Māori focused approaches like tikanga will not only help Māori but also NZ as a whole. This should be embraced and applauded. Therefore, having this type of CR programme within the mainstream health system will benefit all participants. Having a greater exposure to tikanga, non-Māori would see benefits of it.

However, there are many challenges and barriers Māori face within the health sector including CR. These can be seen through the reluctance of Māori to engage in CR programmes and could be a result of historical and systematic factors contributing to this. The study found that the nature of clinical relationships had an impact on the service to Māori. There have been long standing issues in the clinical health systems for Māori. More work is needed in order to find the best ways to encourage more Māori and make CR programmes more culturally safe and inclusive for them to enrol and be retained. Maori may have a lack of understanding on how the mainstream health care system works. However, if tikanga was embedded into these systems to help combat colonised frameworks like the study, benefits could be seen for them. Within this current study non-Māori had no issue or complaints on how the programme was implemented. Therefore, why would it not be used to try and achieve some form of equity within this health challenge of CR and to help retain participants particularly Māori. Therefore, the utilisation of tikanga could offer this platform to achieve this.

Another finding was the marginalisation of Māori in the healthcare system. The health system within Aotearoa is constructed of colonial infrastructure and systems that proves ineffective in addressing systemic inequities created by the process of colonisation. Therefore, there is a need for connections with the Māori worldview to try and overcome these. At one level Māori seek the same outcomes of all New Zealanders e.g. access to adequate health care however, on a more significant level, Māori wellbeing is not the same as that for non-Māori. Thus, introducing tikanga could help to overcome this marginalisation and with the current reforms in the health system and Te Aka Whai Ora this could provide a positive outlook specially for CR.

Lastly, the role of communication was identified as an essential theme. This was identified throughout the entire process from the hospital staff through to the CR programme. Having effective communication in the study was found to increase willingness to attend CR and trust those involved with the programmes. It created a form of relationship between participants and the staff.

It was highlighted that the need for cultural competency training, system changes, and improvements in the referral and communication processes were critical to such a programme. There is a need for continued research in this area, particularly exploring automated referrals and strategies in encouraging Māori to attend CR. There is also a need to address systemic issues including the impacts of colonial history and racism in the health system. By doing this it will reduce inequities and increase the uptake of CR .

Personally, my interests in this work have now seen the inequities and the lack of evidence that there is around this issue. There is a need to do more about these with an excitement to see how tikanga Māori can be included within mainstream work. A lot of hard work and dedication has gone into this study and it is the hope that it is the start of something to come within this space of research to try and overcome health inequities for Māori within CR. Further research to address the continued disadvantages Māori face in CR is needed. There is a wide scope for more work to be carried out in this field.

Overall, one of the participants in the study said they were very reluctant to give up the programme. He did not feel like it was a waste of time and thought it was such a useful thing in viewing the process. Thus, this is a positive step in trying to increase that uptake into CR by seeing that the tikanga based approach was well received from non-Māori.

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Appendices

Appendix 1: Participant information sheet

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Nau mai, Haere mai: Simple strategies to improve uptake and attendance of cardiac rehabilitation

Patient and whānau interview sheet

Thank you for considering taking part in this study. My name is Geoff Kira and I am a Māori health scientist at Massey University. I am not a medical professional and am unable to provide advice for your condition.

Cardiac rehabilitation (CR) is a programme for recovery from a heart event. Although CR provides a better quality of life and reduced risk of second heart event, CR programmes find it difficult to enrol referred patients. The situation in New Zealand is no different from overseas but little has been done to address the issue.

The purpose of this research is to test a different way to package CR services to encourage patients to take part in CR, especially Māori patients. The intervention is not CR itself, but a wrap-around service including transport, food and follow-up calls. To do this we need to follow your progress for a short period of time (about 6 months) after you have been discharged from hospital, whether you decide to enrol in CR or not.

What is the aim of this study?

The primary aim of this study is to investigate the impact of a few simple strategies (the intervention) on CR enrolment and attendance.

Two secondary aims are:

1. How do patients feel about cardiac rehabilitation?
2. Does the intervention result in better health outcomes for patients?

Who is involved?

All patients who were eligible to be referred to cardiac rehabilitation from the MidCentral district health board region are welcome in this study. Some participants can be self-referred or referred by their GP.

How long will the study take?

We will track your heart health-related progress for six-months. With your consent, we will collect only heart health-related information from your discharge notes and after six-months from your medical record (cholesterol, blood pressure, medication). The study will track enrolments and attendance over three consecutive 7-week CR programmes (21 weeks) and will conclude 6-months after the last CR programme.

- If you have chosen to take part in CR, a free seven-week education programme awaits you.

- For those who do not choose CR, we will see you at the end of the six-month period.

How many people will be recruited into the study?

We are aiming to recruit a minimum of 138 eligible patients over 21 weeks. We estimate that of the 138, 50% (69 patients) will be enrolled in CR and be making use of the intervention (transport, communication, food) over 21 weeks. If you are part of the study, you are under no obligation to enrol in CR.

What is involved if I take part?

If you decide that you would like to take part in the study, your expression of interest will be registered by a nurse (30 minutes maximum) and passed on to Dr Geoff Kira. Dr Kira will go over the study information and consent process. Please feel free to contact Dr Geoff Kira independently using the contact details at the end of this form.

We will need some personal information such as full name, address, dates of birth and ethnicity and medical information (cholesterol, blood pressure, and heart medication prescription), such as discharge summary from the start of the study and six months later.

We will call you, at least every fortnight, to maintain communication with you over the 6-months. The intention of these calls is to ensure that you are making use of the services for which you are eligible and that if you need heart health support we can direct a health professional to you. You may withdraw from this service at any time.

We may ask you to participate in a confidential one-hour audio-recorded interview, which is held at a venue of your choosing (such as your home). But as only twenty interviews are needed, you may not be asked even if you have volunteered. You must also confirm that you know the “Angina Action Plan”.

Whether you choose to participate in CR (<u>the intervention</u>) or not, we ask for your participation in this study. This will help us find or develop alternate methods of support for your recovery.

What is the intervention?

The intervention (not cardiac rehabilitation) is a set of strategies that are designed to encourage more patients to enrol in CR and stay for the length of the programme (seven weeks). The strategies include: Free transport within the PNCC boundary to CR, free food at all CR sessions, recruitment posters at the hospital and GP clinics, and the employment of a social workers to support P2CR staff with communication (fortnightly phone calls).

What are my legal rights?

Taking part in this study is entirely voluntary (your choice). You do not have to take part. If you choose not to take part in this study, your health care will not be affected in any way. You may withdraw from the study at any time, without having to give a reason. If you withdraw from the study, you do not have to withdraw from cardiac rehabilitation. You are encouraged to ask questions at any time during the study.

Will there be any costs involved?

There are no costs involved in taking part in this study.

What are the risks and benefits of this study?

Possible benefits

There are no direct physical health or health care access benefits to this study. By taking part in this study you will be contributing to the development of new programmes that aim to improve access to cardiac rehabilitation.

Possible risks
There are no known risks associated with this study.

Compensation
In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by the Accident Compensation Corporation (ACC) legislation. ACC cover is not automatic and each case is assessed by ACC (2002 Injury Prevention Rehabilitation and Compensation Act). If you have ACC cover, generally this will affect your right to sue the investigators. If you have any questions about ACC, please contact your nearest ACC office or ask us for more information before you agree to take part.

Will the information about me be kept confidential?
Yes, the study files and all information that you provide will remain strictly confidential. No material that could personally identify you will be used in any reports on this study. The information will be kept securely in a locked cabinet in a locked room at the School of Health Sciences, Massey University, and destroyed after 10 years according to national research guidelines. All computer records will be password protected. All future use of the information collected will be strictly controlled in accordance with the Privacy Act, 1994.

During the study, ethics committee representatives, study personnel, members of the research team and possibly representatives of the study sponsor may check your records.

This will only be done to check the accuracy of the information collected for the study and the information will remain confidential.

When will the results be available?
This study will take two years to conduct, and so results will not be available until 2020. You will be asked if you would like to be sent a copy of the overall results.

Ethics approval
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 18/79. If you have any concerns about the conduct of this research, please contact Dr Lesley Batten, Chair, Massey University Human Ethics Committee: Southern A, telephone 06 356 9099 x 85094, email

humanethicsoutha@massey.ac.nz.

Study contact

Dr Geoff Kira, School of Health Sciences, Massey University. M: +64 21 403 889.
P: +64 4 979 3974

If you have any questions or concerns about your rights as a participant in this study, you can contact an independent health and disability advocate. This is a free service provided under the Health and Disability Commissioner Act.

Telephone: (NZ Wide) 0800 555 050

Free Fax (NZ Wide) 0800 2787 7678 (0800 2 SUPPORT)

Email (NZ wide): advocate@hdc.org.nz

Thank you for taking the time to read about this study.

Please keep this sheet for your information

Appendix 2: Consent form Participants

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Nau mai, haere mai:
Simple strategies to improve uptake and attendance of cardiac rehabilitation

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Please circle the Yes or No option beside each statement

I understand that I will not be identified in the published results	Yes	No
I understand that I may withdraw from the study at any time	Yes	No
I know the Angina Action plan and know what to do in the event of Angina or cardiac arrest	Yes	No
I consent to the collection of specific medical information related to my heart health such as discharge summary, blood tests (e.g. cholesterol), and prescriptions (e.g. blood pressure tablets)	Yes	No
I understand that I may be requested to participate in an interview at a later date	Yes	No
I agree to participate in this study under the conditions set out in the Information Sheet.	Yes	No

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

Full Name - printed ....

Appendix 3: Participant interview schedule sheet

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Nau mai, Haere mai: Simple strategies to improve uptake and attendance of cardiac rehabilitation

INTERVIEW SCHEDULE

Introduction:

Tena koe and thank you for agreeing to participate in this interview. My name is Patti Gibson-Park and I am a Masters student from Massey University. We're wanting to know what you think of cardiac rehabilitation.

To begin, have you heard of the term cardiac rehabilitation?

When you think of cardiac rehabilitation, what images come to your mind?

What do you think is the purpose of cardiac rehabilitation?

Do you think it is useful? Why or why not?

Did anyone help you out once you were discharged from hospital?

How confident did you feel you could recover?

Questions for those that attended P2CR

Thinking about the cardiac rehabilitation sessions, was there anything that stood out for you? Anything good/bad?

Did you use the free transport? How did you find that?

What did the addition of food do to the P2CR sessions?

What did you think of the communication from the rehabilitation team?

How did each of them support you?

Was there anything else you needed?

Lastly

Before we finish, is there anything you would like tell me about your experience in cardiac rehabilitation?

Appendix 4: Kaupapa Māori Unit expression of interest email

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Expression of Interest Email:

Tenā koe,

I am a current postgraduate student at Massey University doing my Master's in Public Health. I am currently doing my thesis within the area of Cardiac Rehabilitation with a focus on referral for Māori.

The title of my research is:

Nau mai, Haere mai: Understanding Kaupapa Māori approaches to referring and enrolment to cardiac rehabilitation

I found your service via the Heart Foundation Heart Help Directory. We are looking for your views on participation of Māori in Cardiac Rehabilitation and would appreciate it if you were able to send on the information of a staff member that could be interviewed. We are wanting to understand Māori stakeholder and workforce perspectives of referral and enrolment of Māori outpatients into Cardiac Rehabilitation.

I hope you are able to help me or direct me to the right person but I will do a follow up phone call in the next few days too.

Look forward to hearing from you.

Ngā mihi
Patti Gibson-Park

Appendix 5: Kaupapa Māori Unit information sheet

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Nau mai, Haere mai: Understanding Kaupapa Māori approaches to referring and enrolment to cardiac rehabilitation

Thank you for considering taking part in this study. My name is Patti Gibson-Park and I am a Māori Master's student at Massey University.

As you are aware cardiac rehabilitation (CR) is a programme for recovery from a heart event. Although CR provides a better quality of life and reduced risk of a second heart event, CR programmes find it difficult to enrol referred patients. The situation in New Zealand is no different from overseas but little has been done to address this issue. We hope to understand what your views are on the referral processes for Māori patients into your services.

What is the aim of this study?

The primary aim of this study is to understand Māori stakeholder and workforce perspectives of referral and enrolment of Māori outpatients into cardiac rehabilitation.

Who is involved?

All Kaupapa Māori CR units who have been identified within Aotearoa are welcome to the study.

How long will the study take?

This study will take approximately one month.

How many people will be recruited into the study?

We are aiming to recruit a minimum of four Kaupapa Māori CR units to take part in this study.

What is involved if I take part?

If you decide that you would like to take part in the study, your expression of interest will be noted by Patti Gibson-Park. I will go over the study information and consent process. Please feel free to contact Patti Gibson-Park using the contact details at the end of this form.

I will ask you to participate in a confidential one-hour audio-recorded interview, which will take place over the phone. A time that suits you will be identified between yourself and Patti Gibson-Park.

What are my legal rights?

Taking part in this study is entirely voluntary (your choice). You do not have to take part. You may withdraw from the study at any time, without having to give a reason. You are encouraged to ask questions at any time during the study.

Will there be any costs involved?

There are no costs involved in taking part in this study.

What are the risks and benefits of this study?

There are no known risks to participating in this study.

Will the information about me be kept confidential?

Yes, the study files and all information that you provide will remain strictly confidential. No material that could personally identify you will be used in any reports on this study. The information will be kept securely online in a password protected document, and destroyed after 10 years according to national research guidelines. All computer records will be password protected. All future use of the information collected will be strictly controlled in accordance with the Privacy Act, 1994.

During the study, ethics committee representatives, study personnel and members of the research team may check your records. This will only be done to check the accuracy of the information collected for the study and the information will remain confidential.

When will the results be available?

This study will be concluded at the beginning of 2023 with results available after this time. You will be asked if you would like to be sent a copy of the overall thesis report.

Ethics approval

This project has been approved by the Massey University Human Ethics Committee as a low-risk project: Application ID 4000026808

Study contact

Patti Gibson-Park	Dr Geoff Kira
M: +353 87 090 4674	M: +64 21 403 889
Email: pattigrogan18@gmail.com	E: geoff.kira@vuw.ac.nz

If you have any questions or concerns about your rights as a participant in this study, you can contact an independent health and disability advocate. This is a free service provided under the Health and Disability Commissioner Act.

Telephone (NZ Wide): 0800 555 050
Free Fax (NZ Wide): 0800 2787 7678 (0800 2 SUPPORT)
Email (NZ Wide): advocate@hdc.org.nz

Thank you for taking the time to read about this study.
Please keep this sheet for your information.

Appendix 6: Consent form KMCR

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Nau mai, Haere mai: Understanding Kaupapa Māori approaches to referring and enrolment to cardiac rehabilitation

I have read the information and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. Please circle the Yes or No option beside each statement.

I wish to be identified in the published results	Yes	No
I understand that I may withdraw from the study at any time	Yes	No
I understand that I may be requested to participate in an interview at a later date	Yes	No
I agree to participate in this study under the conditions set out in the information sheet	Yes	No
I give consent to have my interview audio recorded for the interviewers reference	Yes	No

Signature:
Full Name (Printed):
Date:

Appendix 7: Kaupapa Māori unit interview schedule sheet

MASSEY UNIVERSITY
COLLEGE OF HEALTH
TE KURA HAUORA TANGATA

School of Health Sciences
Massey University
Private Mail 11-222
Palmerston North 4442

Investigation into Kaupapa Māori cardiac rehabilitation units

1. How many patients come through your service per year?
2. How many staff do you have within your cardiac rehabilitation service?
3. What do you provide within your service for patients? Education, exercise (green Rx) or any other resources?
4. What is the format of your programme in terms of length, group based, individual, location?
5. Do you know of any other KMCR in New Zealand relating to cardiac rehabilitation?
6. Where do your referrals come from? How many would you get monthly/yearly? Do you think that everyone with ACS is referred from the hospital? Is there any perceived difference between Māori and non-Māori referrals?
7. Do you think that the referrals are sufficient?

1. What is the best way you feel it is to communicate with CR patients?
2. Is your system supporting Māori taking up CR? How?
3. What can we do to make it more attractive to Māori do you think from your view point?
4. What are the specific things you do in attracting Māori into your system of CR?
5. How does kaupapa Maori fit into CR?
6. Health system and referral of Maori into the system…

7. Attraction of Maori into the system? Given the higher proportion of Māori with heart disease, what initiatives might enrol more Māori in CR?

- Do you think the referrals are sufficient for Maori and supporting the relevant patients into programmes?
- How are they looked after in a support programme?

Appendix 8: Kaiawhina Field Notes

Descriptive (what was seen and heard)

- "The purpose of the CR programme is to support cardiovascular patients who have either been referred from hospitals or self-made referrals. It is a programme for recovery from heart events".
- "The number of clients whom would attend each session would either be general or Māori clients".
- "During group exercises, it involved stretches for both legs and arms. The Exercise Physiologist would allow 20 minutes for all exercises to be implemented".
- "At the beginning of each session as a group, they would commence with various exercises. Most clients would like the idea and participate in it very well".
- "After the exercise, clients would sit and relax, and chat among themselves while staff or guest speakers would prepare their presentations".
- "All presentations are based and are aligned with cardiovascular heart events and treatments".
- "Each presentation was delivered via audio visual. Each of the guest speakers that delivered the presentations were clear, wise and experienced in their field".

Affective (emotional responses to the data collection process - fear, concern, anger, joy)

- "Each presentation goes for 2 hours per session. This becomes a positive option for our clients, because each presentation that is delivered is different from each other".
- "Also another vital presentation held was on nutrition and dietary. I observed many of our clients acknowledge this, many questions were asked, which was great, as the clients were curious, but enjoying the information".
- "I was able to personally talk and share knowledge but had learnt more via clients as they all shared displays of being so wise and very educated".
- "I observed the staff at each session and their introduction with the clients. Staff showed compassion and respect towards all clients and each other".
- "Every staff member was so friendly and full of knowledge and wisdom. The connection with each staff member was kind, caring and approachable. Staff would make sure every client who would attend felt comfortable and was always reassured on anything if they had any worries".
- "I would reassure them that their decision was well respected. I would offer any additional support or offer services if necessary".

Methodological (comments on what and how data was collected)

- “The CR programme is a programme that consists of a one day session each week. Each session would run from 1-3pm, every Tuesday for 14 weeks”.
- “Upon each arrival all clients are automatically seen and are attended to via staff from Think Hauora Clinical Exercise Physiologist”.
- “Their role is to monitor each client and track and record how they are feeling, making sure their blood pressure, temperature and heart are on track”.
- “At every session held, Think Hauora would invite a guest speaker to present a free presentation on health and well-being which relates to cardiac heart events”.

Theoretical (notes about abstract thoughts, reflections)

- “Monitoring each client allows the Exercise Physiologists to not only observe their health but to deliver and analyse the best possible exercise that could cater for their individual needs”.
- “However, every exercise that is introduced is made to cater as a group rather than individually at the time”.
- “Think Hauora staff would present healthy and delicious food that was nutritional and good for the heart, this would normally be served 30 minutes into the sessions had begun”.
- “All the information that was shared via each guest speaker would speak about the importance each presentation had shown, in order to educate our clients and to feed them knowledge and understanding, especially where it concerns their heart issue”.
- “Overall, each presentation was an excellent turning point, because it would give clarity for each audio that was delivered, where each lesson would be beneficial for the clients and it would support them”.
- “My overall observation was that speaking with staff, communicating with the client, learning more about who they are and having a deeper understanding of their heart and the risks, where it can have such a huge impact upon their lives”.
- “I would listen to their stories as to why they have heart problems and how. Some would express how their heart events would impact upon them causing them not to overwork or do too much that could set off more heart issues”.
- “I was given a list of clients who were existing clients to call. Many of these clients would speak of their heart condition and some were very open and honest as to why they were not ready to re-join the programme again”.

- “In conclusion, the recommendation of having a CR programme available for all outpatients who have been through heart surgery, I believe should be welcomed”.
- “The CR is a positive way to support our people, especially our Māori clients. It is so important to have programmes like our CR one to hopefully continue on, as this is an effective programme for those suffering with such a heartfelt condition”.
- “I am thankful to have been a part of this short journey. I too have learnt many new and wonderful things and stories. I hope that the research behind this mahi will continue as I believe it is a creative method moving forward and will surely grow and be so beneficial in order to support people with cardiovascular conditions”.
- “I believe in this programme and I support the hard work and efforts that go along with trying to establish and maintain the whole incentive”.

Contextual (about the place, clinic and people - broad, generic comments)

- “I had a conversation with the Exercise Physiologists where they had expressed a recommendation to have more knowledge around each clients heart conditions so that they could perhaps match or discuss with all clients, various or different types of exercises, that will cater each individual needs”.
- “They had expressed that each condition may be different and may need different exercises to support them either at home or while attending their group sessions”.
- “Staff would talk the exercises through, so that each client would have an understanding on what and why they were doing these exercises”.
- “After the exercise, staff would announce that Kai (food) and beverages would be available for all clients at any given time”.
- “Two examples of the presentations that were delivered were the following; 1) The Heart Foundation & 2) Pharmacy and Medication”.
- “As a Kaiawhina my role was to make connections with clients, not only from attending every group session, but from contacting clients by telephone”.
- “Manawatu, Palmerston North Region should sustain and allow for the programme to be made available within our rohe and community”.