Cultural Safety in Paramedic Practice: Experiences of Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics.

Sarah Penney

2024

School of Clinical Sciences, Paramedicine Department

A thesis submitted to

Auckland University of Technology

in fulfilment of the requirements for the degree of Master of Philosophy

Abstract

Aim

This thesis sought to explore and understand Māori experiences of cultural (un)safety in acute pre-hospital cardiovascular care provided by paramedics.

Methods

The research utilised a qualitative descriptive approach underpinned by Kaupapa Māori Research (KMR). The decision to use qualitative descriptive was based on the subjectiveness of experiences and the ability of qualitative descriptive research to discover and comprehend phenomena, processes, perspectives, or worldviews, particularly when information is required directly from those experiencing them. Furthermore, KMR was important to avoid perpetuating feelings of alienation and disempowerment that are common for Māori throughout colonial research. The application of KMR principles, outlined by Smith (1992), ensured the research was beneficial for Māori, under Māori control, and informed by mātauranga Māori.

First, a narrative review was completed to synthesise evidence on access to, and quality of, emergency medical services (EMS) cardiovascular care for Māori. The narrative review helped to establish the context and to understand what is currently known about Māori and whānau access to and experiences of acute pre-hospital cardiovascular care by paramedics. Following the narrative review, semi-structured in-depth interviews using open-ended questions were completed with ten participants and/or whānau. The interviews were then analysed using a general inductive approach to explore the experiences of cultural (un)safety for Māori who received acute pre-hospital care for chest pain or cardiac symptoms from paramedics and/or the experiences of whānau. An exploration of the participant's own experiences when utilising the ambulance and the care they received was completed as part of the data analysis.

Findings

The narrative review highlighted longer delays between the onset of symptoms and first medical contact (FMC) for Māori patients experiencing acute coronary syndrome (ACS) (Garofalo et al., 2012; Kerr et al., 2019). This included Māori being more likely to

self-transport to hospital or present to their general practice or Accident and Medical centre before being transported by ambulance (Garofalo et al., 2012). This finding is critical, as delays in defibrillator availability and reperfusion therapy result in, poor, and inequitable outcomes for Māori. No research regarding Māori experiences of accessing EMS care for cardiac symptoms could be found.

From the semi structed interviews, three overarching themes were identified, including interpersonal factors, service and access factors and active protection of Māori, as well as nine key sub-themes. It was noted significant gaps exist regarding the interpersonal interactions between Māori and paramedics, including clinically and culturally appropriate communication, connection, and rapport. Furthermore, systemic, and structural barriers such as timely access to pre-hospital care and representation of Māori within the pre-hospital workforce were reported.

Conclusion

Māori experience culturally unsafe care throughout the health system, including pre-hospital care. Addressing these poor experiences for Māori and whānau requires a comprehensive approach of cultural safety training, increased Māori representation in the paramedic workforce, and systemic changes to improve pre-hospital healthcare access for Māori communities. Ultimately, Māori co-design and a by-Māori approach must be utilised as partnership between Māori non-Māori is pivotal in honouring te Tiriti o Waitangi (te Tiriti) and improving outcomes for Māori.

Contents

Abstract i
List of Figures vi
List of Tables vii
List of Appendices viii
Attestation of Authorship ix
List of Co-Authored Works x
Acknowledgements xi
Ethics Approval xiii
Chapter 1 Introduction 14
1.1 Introduction 14
1.2 Māori and CVD in the Pre-hospital Context 15
1.3 Research Question and Aims 16
1.4 Research Approach 17
1.5 Thesis Overview 18
Chapter 2 Background 19
2.1 Introduction 19
2.2 Cardiovascular Disease 19
2.2.1 Aotearoa, New Zealand trends 20
2.2.2 A focus on IHD and ACS 20
2.3 Māori and CVD 23
2.3.1 Māori rights to equitable health 23
2.3.2 Māori CVD inequities 25
2.3.3 Contributing factors to CVD inequities 26
2.3.4 Current CVD treatment inequities 27
2.4 Pre-Hospital Care and CVD 28
2.4.1 Defining pre-hospital care in Aotearoa, New Zealand 28
2.4.2 Inequities in accessing pre-hospital CVD care and resource 30
2.4.3 Pre-hospital workforce and inequities 30
2.5 Cultural Safety 32
2.6 Summary 32
Chapter 3 Narrative Review (Manuscript 1) 34
3.1 Introduction 34
Access to, and quality of, emergency medical services cardiovascular care for Māori: a narrative review. 35
3.2 Abstract 35
3.3 Background 36
3.4 Methods 37

3.4.1 Search strategy and screening 37
3.4.2 Research quality appraisal 39
3.4.3 Analytic approach 40
3.5 Results 40
3.5.1 Research quality appraisal 44
3.5.2 Main findings 44
3.6 Discussion 47
3.6.1 Strengths and Limitations 50
3.7 Conclusion 50
3.7.1 Acknowledgements 51
Chapter 4 Methodology 52
4.1 Introduction 52
4.2 Methodologies 52
4.2.1 Introduction 52
4.2.2 Epistemology 52
4.2.3 Qualitative Research 54
4.2.4 Qualitative descriptive research 55
4.2.5 Kaupapa Māori research 56
4.2.6 The researcher 60
4.2.7 Summary of Methodologies 60
4.3 Methods 61
4.3.1 Introduction 61
4.3.2 Consultation 61
4.3.3 Data collection 62
4.4 Summary 66
Chapter 5 Results (Manuscript 2) 67
5.1 Introduction 67
Cultural Safety in Paramedic Practice: Experiences of Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics. 67
5.2 Abstract 67
5.3 Introduction 68
5.4 Methods 69
5.4.1 Kaupapa Māori Research 69
5.4.2 Eligibility criteria 69
5.4.3 Recruitment 70
5.4.4 Ethics 70
5.4.5 Interviews 70
5.4.6 Data analysis 70
5.5 Results 71
5.5.1 Interpersonal factors 74
5.5.2 Access and Service Factors 76

5.5.3 Active Protection of Māori 78
5.6 Discussion 81
5.7 Conclusion 84
Chapter 6 Discussion 85
6.1 Introduction 85
6.2 Summary of Thesis 85
6.2.1 Background and aim 85
6.2.2 Research approach 86
6.3 Key discoveries 88
6.3.1 Summary of findings 88
6.3.2 Knowledge gaps addressed 90
6.4 Strengths 92
6.5 Limitations 92
6.6 Key recommendations and implications for practice 93
6.6.1 Cultural safety education 94
6.6.2 Workforce development 94
6.6.3 Access barriers 95
6.6.4 Further research 96
6.7 Conclusion 97
References 98
Glossary 120
Appendices 122

List of Figures

Figure 3-1. Flowchart of selection process 39

List of Tables

Table 3-1. Search terms 38

Table 3-2. Included articles on inequities in cardiovascular disease (CVD) outcomes and access to CVD care in an EMS context in NZ. 42

Table 5-1. Themes and sub-themes identified during the interviews with selected participant quotes 72

List of Appendices

Appendices 1. Ethics Approval 122
Appendices 2. Interview prompts and schedule 123
Appendices 3. Pānui (recruitment flyer) 124
Appendices 4. Participant information sheet 125
Appendices 5. Consent form 131
Appendices 6. Oral consent form 133
Appendices 7. Transcriber confidentiality agreement 134

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

02 May 2024

_____ _____

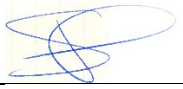
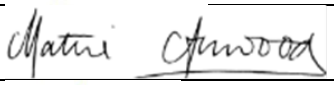
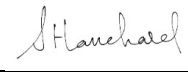
Signature Date

List of Co-Authored Works

Manuscripts formatted for publication:

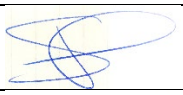
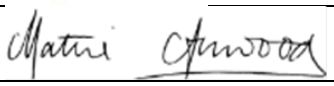
Chapter 3: Access to, and quality of, emergency medical services cardiovascular care for Māori: a narrative review. ***Penney (80%)***, Bridget Dicker, Karen Brewer, Sandra Hanchard, Matire Harwood.

This has been composed in preparation for submission to the Australian and New Zealand Journal of Public Health. It was submitted July 7, 2023, and returned July 13, 2023. It will be revised and re-submitted in 2024.

Sarah Penny 80%	
Bridget Dicker	
Matire Harwood	
Karen Brewer	
Sandra Hanchard	

Chapter 5: Cultural Safety in Paramedic Practice: Experiences of Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics. ***Penney (80%),*** Bridget Dicker, Matire Harwood.

This has been composed in preparation for submission to the Journal of Primary Health Care.

Sarah Penney 80%	
Bridget Dicker	
Matire Harwood	

Acknowledgements

I would like to express my deepest gratitude to the following individuals, whose support and guidance has been instrumental in the completion of this thesis.

Firstly, I want to extend my heartfelt thanks to the participants who generously gave their time to speak with me, sharing their very personal experiences. These provided valuable insights that enriched the findings of this study, and their willingness to contribute has been integral to this research.

I am also profoundly grateful to my supervisors, Dr Bridget Dicker and Dr Matire Harwood, for their continuous and unwavering support and guidance through the entire research process. Their expertise and feedback were invaluable in shaping the topic choice, methodology and content of this thesis. Thank you both for being so generous with your time and energy.

Many thanks to my Head of Department Tony Ward and Programme leader Mel McAulay for your support and encouragement, as well as my peers and colleagues who provided both professional and personal support particularly over this past year; in particular, Celeita Williams for the many hours you have spent helping me throughout this journey.

I would also like to acknowledge and express my sincerest gratitude to all the members of Manawataki Fatu Fatu for ACCESS rōpū. From the amazing and very well-established research leadership team through to my fellow tauira, I am so grateful to have been able to work alongside you for the past two years. A further huge thanks to Jacqui Kidd and the members of the AUT Māori rōpū, along with the crew at Vaughan Park Anglican Retreat Centre who have also had played an enormous part in my journey.

To my family, particularly my Mum, Leanne and Dad, Ricky, my partner, Sam, and friends, who provided inspiration, love, support, encouragement, and understanding, your belief in me has been a persistent source of motivation.

Finally, I am very grateful to have received financial support during this thesis and would like to acknowledge Auckland University of Technology in awarding me the

Faculty of Health and Environmental Sciences (FHES) 2022 Staff Postgraduate Research Fellowship. Additionally, I would like to acknowledge the Heart Foundation of New Zealand and the National Science Challenge Healthier Lives for their financial support through the Manawataki Fatu Fatu for ACCESS rōpū.

This thesis is a testament to the collective effort and support of these individuals, and I am truly grateful, ngā mihi nui ki a koutou kātoa.

Ethics Approval

Ethical approval for this research was granted by the Auckland University of Technology Ethics Committee (AUTEC). The AUTEC reference was 21/388, with approval granted in December 2021 (Appendix 1).

Chapter 1 Introduction

1.1 Introduction

Cardiovascular diseases (CVD) are now the leading cause of global mortality and are a key contributor to disability and reduced quality of life (Roth et al., 2020). Despite gains in CVD prevention and access to treatment within Aotearoa, New Zealand (NZ), it remains the leading cause of death and a significant cause of poor health (Grey et al., 2018b; Ministry of Health, 2016b). However, the CVD burden is greatest for Māori, who are more likely to experience and die from CVD at a much younger age (Grey et al., 2018a; Ministry of Health, 2015). Māori also have a higher burden of severe comorbidity than non-Māori but are less likely to receive interventions such as angiography and revascularisation (Chan et al., 2008; Grey et al., 2016b).

Existing legislation such as the New Zealand Public Health a Disability Act 2000 promotes the right to health equity and access to the highest attainable standard of health for Māori. These rights are reinforced by te Tiriti o Waitangi (te Tiriti) and the Declaration on the Rights of Indigenous Peoples (Berghan et al., 2017; United Nations, 2007). However, inequities occur despite policies, such as the New Zealand Public Health and Disability Act 200, outlining legislative obligations on systems, services, and practitioners to reduce disparities (Came et al., 2021; Health Quality and Safety Commission New Zealand, 2017; Waitangi Tribunal, 2019). The fact that inequities persist demonstrates that these rights are not being met and highlights the need for further investigation to inform rectification.

This thesis seeks to understand pre-hospital care from the perspectives of Māori. It explores the experiences of cultural (un)safety for Māori who have received acute pre-hospital care for cardiac symptoms from paramedics, as well as the experiences of their Whānau.

This chapter introduces the reader to the thesis, including a brief overview of the prevalence of CVD for Māori and CVD in the pre-hospital context, the research aims and objectives and the approach taken to achieve these, and an overview of the significance of the research. It concludes with a summary of the thesis structure.

1.2 Māori and CVD in the Pre-hospital Context

Within NZ, systemic, unjust, and preventable disparities in health outcomes between Māori and non-Māori prevail. This follows a global trend whereby Indigenous peoples experience significantly poorer health compared to their non-Indigenous counterparts (Silburn et al., 2016). Attribution of this situation is due to a complex colonial history, resulting in unequal exposure to poor determinants of health (DOH) as well as differential access to health services and quality of care for Māori (Reid & Robson, 2007; Silburn et al., 2016). As a result, Māori experience significantly poorer health than non-Māori, with the disproportionate effects of CVD for Māori compared to non-Māori playing a significant role in this gap (Chan et al., 2008).

Factors driving ethnic CVD inequities are multifaceted and complex. Māori are more likely to experience inequitable exposure to poor DOH that result in poorer socio-economic circumstances and thus poor access to health-promoting resources. However, inequities persist even after considering factors such as deprivation (Chan et al., 2008; Ministry of Social Development, 2016; Walsh & Grey, 2019).

Differential access to health services and differences in the quality of care received are crucial factors in understanding inequities in CVD outcomes for Māori. Furthermore, as prompt treatment for CVD conditions such as acute coronary syndrome (ACS) events is vital in decreasing the likelihood of death and increasing the potential benefit of treatment, pre-hospital care plays a crucial role in ensuring equity in access to and quality of healthcare. Despite the importance of equity of treatment, research shows that Māori experience inequitable access to pre-hospital defibrillation (Dicker et al., 2019a), as well as delays in reperfusion therapy and overall delays in accessing pre-hospital care (Garofalo et al., 2012; Kerr et al., 2019). Critically, Māori experiencing ACS are less likely to go to the hospital by ambulance, and those that do often have a delay between the onset of symptoms and calling 111, or they present first to their general practice or an Accident and Medical centre. This delays ambulance transfer to hospital and access to definitive care (Garofalo et al., 2012). Focused research to understand

this phenomenon is necessary to reduce the barriers that prevent patients from calling an ambulance early. Currently it is unknown why this delay in calling occurs and, therefore, how it can be improved.

Interpersonal racism, which involves prejudiced assumptions about, and discriminatory actions toward others based on race, and systemic racism, which involves differential access to goods, services, and opportunities by race, are increasingly recognised as important determinants of health (DOH) contributing to ethnic inequities. Thus, emphasising the role of health systems, services, and practitioners in ethnic based health inequities (Jones, 2000, 2001; Reid & Robson, 2007; Reid et al., 2000). Notably, inequities have been linked to poor experiences in healthcare due to unequal partnerships, ineffective communication, and lack of empowerment, respect, and trust (Reid & Robson, 2007). Based on research in other health disciplines, it is clear that experiences of culturally unsafe healthcare are contributing to reduced engagement in healthcare and health inequities (Cram et al., 2003; Harris et al., 2006; Wilson & Barton, 2012). In order to better understand the pre-hopsital experiences of Māori this thesis will utilise concepts of cultural safety to explore the experiences of cultural (un)safety for Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics.

1.3 Research Question and Aims

The aim of this thesis was to answer the research question:

What are the experiences of cultural (un)safety for Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics?

- To explore Māori and whānau experiences of cultural safety in acute pre-hospital care by paramedics.
- To understand the effect of these experiences for Māori and whānau.
- To generate recommendations for improvement of culturally safe acute care for Māori and whānau in the pre-hospital ambulance setting.

1.4 Research Approach

There are many methodological approaches to research which exist and differ in ontological and epistemological stance. Therefore, when completing research, the methodology and associated methods and tools must support the research aim in robust, appropriate, feasible, and culturally safe ways (Grant & Giddings, 2002).

Although quantitative research has contributed significantly to the current knowledge of CVD care and outcomes, to complete quantitative research, one must be consistently objective to differentiate scientifically established objective meanings from subjective meanings. However, this causes people's everyday perceptions and experiences to be seen as inferior or less 'truthful' to more objective scientific measurements, despite subjective meanings being crucial to people's lives. Hence based on the subjectiveness of experiences and to avoid perpetuating feelings of alienation and disempowerment that have previously been reported by Māori when accessing healthcare, this research utilised a qualitative descriptive approach underpinned by Kaupapa Māori Research (KMR).

Qualitative descriptive research aims to discover and comprehend phenomena, processes, perspectives, or worldviews, particularly when information is required directly from those experiencing them (Bradshaw et al., 2017; Caelli et al., 2003; Merriam, 2002). The qualitative descriptive approach allowed for detailed insight into human experience by ensuring that experiences were described from the participants' viewpoint and focused on producing detailed descriptions from those with the experience (Bradshaw et al., 2017). This allowed for an in-depth understanding, first through literal description, and then through analysis and interpretation highlighting the subjective interpretation of one's reality, supported by verbatim participant quotes. This allowed the researcher to stay close to the surface of data while still providing a detailed and interpretive result (Bradshaw et al., 2017; Sandelowski, 2010).

The KMR approach allowed Māori to discuss their experiences of utilising pre-hospital ambulance care to determine what was most important to them. Additionally, KMR was essential to the research as it supports Māori development, centres Māori narratives and provides a framework to critically analyse systems and the root causes

of current inequities, particularly colonialism and racism (Curtis, 2016a; Pihama, 2010; Pihama et al., 2002).

1.5 Thesis Overview

The thesis utilises a manuscript structure and is made up of six chapters, including two manuscripts, hence, there may be some repetition between thesis chapters. The first chapter briefly introduced the purpose and structure of the thesis.

Chapter Two provides background information on matters relevant to the research, including a definition of CVD, important concepts, and the exploration of ethnic disparities in CVD to highlight the persisting inequities for Māori.

Chapter three (Manuscript 1) provides a review of the literature and aims to synthesise evidence on access to, and quality of, emergency medical services (EMS) cardiovascular care for Māori by (i) determining if inequities exist in CVD outcomes and access to CVD care in an EMS context in NZ and (ii) identifying Māori experiences of accessing EMS care for cardiac symptoms.

Chapter four describes the proposed methodological approaches for this thesis. It includes a critique of qualitative methodologies and an outline of the perspectives in which the research is located, and the ontological and epistemological position of the research and researcher. Furthermore, the methods used for recruitment, data collection, and data analysis are outlined.

Chapter Five (Manuscript 2) presents the results from the participant interviews identifying three key themes. This chapter presents these themes and includes a summary and explanation of the theme with supporting data in the form of verbatim quotes.

Chapter Six presents a final discussion and summary of the thesis, including key findings, and strengths and limitations of the research approach, concluding with a summary of implications and recommendations.

Chapter 2 Background

2.1 Introduction

This chapter provides a background relevant to the research. Consideration is given to important CVD concepts such as incidence, trends, preventative and acute treatment pathways. Ethnic disparities in CVD outcomes for Māori are also explored to highlight the persisting inequities that exist despite policy, te Tiriti and other legislative obligations, highlighting the need to reduce these. Finally, a brief outline of the pre-hospital context in NZ will be provided, with consideration to existing first response inequities for Māori.

2.2 Cardiovascular Disease

Cardiovascular diseases are a group of disorders of the heart and blood vessels including, ischaemic heart disease (IHD), congenital heart disease, cerebrovascular disease, and peripheral artery disease (McAloon et al., 2016). Cardiovascular diseases are common, result in poor survival, and are growing worldwide, with the number of prevalent cases almost doubling from 271 million in 1990 to 523 million in 2019 (Roth et al., 2020). It is thought the growth of CVD is due to substantial global changes in socioeconomic development that have caused a shift in patterns of global disease burden from communicable, perinatal, and maternal causes to non-communicable causes such as CVD (McAloon et al., 2016). With rapid global economic development, CVD has become a significant burden on healthcare resources in developed and developing nations (Miner-Williams, 2017).

Cardiovascular diseases are now the primary cause of global mortality, with CVD deaths steadily increasing from 12.1 million in 1990 to 18.6 million in 2019 (Roth et al., 2020). Additionally, CVDs are a key contributor to disability and reduced quality of life, with the global trends for disability-adjusted life years (DALYs) and years of life lost (YLL) increasing considerably and years lived with disability (YLD) doubling from 17.7 million in 1990 to 34.4 million in 2019. Thus, CVD remains a crucial cause of premature morbidity and mortality and increasing healthcare costs (Roth et al., 2020).

Ischaemic heart disease and stroke are the top two causes of CVD mortality, featuring in the top 10 causes of global mortality in 2012 (McAloon et al., 2016). IHD is singlehandedly the most significant cause of global disease burden, with the total number of DALYs reaching 182 million, total deaths 9.14 million, and total of 197 million cases in 2019 (McAloon et al., 2016; Roth et al., 2020). According to the Global Burden of Disease, the term IHD constitutes acute myocardial infarction (AMI), chronic and unstable angina, chronic IHD, and heart failure due to IHD (Roth et al., 2020).

Increased incidence, morbidity, and mortality rates of CVD are complicated and are significantly driven by behavioural, environmental, and social factors that increase the CVD prevalence and exposure to risk (Roth et al., 2020). Alarmingly, the CVD burden is not distributed evenly, and disparities based on factors such as age, sex, socioeconomic status, and ethnicity occur within and between countries (McAloon et al., 2016). Disparities in the prevalence of CVD result in an increased burden for some population groups, including reduced quality of life, increased healthcare costs and caretaking responsibilities for families, and reduced life expectancy (Bahall et al., 2020).

2.2.1 Aotearoa, New Zealand trends

Within NZ an increase in prevention and access to treatment over the past twenty years has substantially reduced the overall incidence and mortality of CVD. However, despite these gains, CVD remains the primary cause of death and a significant cause of poor health (Grey et al., 2018b; Miner-Williams, 2017; Ministry of Health, 2015; Selak et al., 2020). It is approximated that annually, CVDs now account for 40% of all deaths and 17% of health loss among those living in NZ (Ministry of Health, 2015, 2016b). The burden of CVD within NZ is not evenly distributed across all ethnic groups, with Māori experiencing a greater burden of CVD than non-Māori living in NZ (Selak et al., 2020).

2.2.2 A focus on IHD and ACS

In lay terms, IHD occurs when fatty material (plaque) accumulates in the arteries around the heart. This results in stiffening and narrowing of the arteries (atherosclerosis), causing a reduction in the amount of blood that can reach the heart muscle to supply it. This can cause symptoms such as shortness of breathlessness, particularly when at rest or undertaking light activity, discomfort, tightness, achiness,

or heaviness within the chest, radiating to the shoulder, arm, neck, or jaw or pain in these areas with no associated chest discomfort (Heart Foundation, 2022). Risk factors for IHD include uncontrollable features such as age, biological sex, ethnicity, and previous family history. Additionally, controllable factors such as smoking, high cholesterol and blood pressure, diabetes, increased weight, reduced physical activity, stress, increased alcohol intake and poor diet also increase the risk of CVD (Heart Foundation, 2022).

It is well established that to reduce the burden of CVD, focus on prevention and treatment, involving primary and acute level care is needed. In regard to primary and preventive care, risk stratification is required, which, according to the Ministry of Health (2018a), should begin in men aged 45 years and women aged 55 years. However, due to the existing CVD inequities for Māori, it is recommended that risk stratification begin 15 years earlier, and occur every five years (Ministry of Health, 2018a). Furthermore, the administration of CVD preventive medications is a key component of risk management for patients with prior CVD or for those who have an estimated five-year CVD risk of 15 percent or more (Ministry of Health, 2018a). Specifically, “lipid-lowering and blood pressure-lowering drug treatment is strongly recommended, and aspirin should be considered in some groups” (Ministry of Health, 2018a, p. 4).

Acute coronary syndrome is a type of IHD and is an umbrella term used to describe a range of conditions where blood supply to the heart is blocked. This is thought to be caused by a ruptured or eroded atherosclerotic plaque that results in clot development and prevents blood from flowing to parts of the heart muscle (myocardium). Unless blood flow is restored quickly, permanent heart damage may occur as lack of blood flow to the myocardium will result in reduced oxygen (ischaemia) and will eventually result in death of the heart muscle (necrosis) (ANZCOR, 2011; Heart Foundation, 2023). ACS is clinically divided into syndromes characterised by either the presence or absence of ST elevation on an electrocardiogram (ECG). The term ACS encompasses ST Elevation Myocardial Infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI), and unstable angina pectoris (ANZCOR, 2011).

Beyond prevention, early recognition and treatment of acute episodes of ACS is critical to decreasing the likelihood of death and increasing the potential benefit of treatment. According to the Australian and New Zealand Committee on Resuscitation (ANZCOR) guidelines, reducing the delay between symptom onset and FMC and initiating targeted treatment and intervention provides the greatest opportunity to improve survival from ACS. Guidelines outlining the treatment for ACS have highlighted the role of symptomatic treatment in patients experiencing ACS, including analgesia for pain management, early nitro-glycerine, and administration of antiplatelet medications, such as aspirin and anticoagulants (ANZCOR, 2016b). Additionally, when a patient presents with STEMI, strategies should be aimed at restoring myocardial (heart) perfusion as soon as possible and are a critical part of ACS management, as the longer a vessel remains blocked, the higher the likelihood of mortality. Restoring blood flow to the heart by percutaneous coronary intervention (PCI), as the preferred method, or fibrinolytic therapy improves patient outcomes when presenting within 12 hours of symptom onset (ANZCOR, 2016a).

Despite the availability of these interventions, there is potential to improve survival in the acute out-of-hospital phase of the ACS care pathway, as evidence over the past decade has demonstrated improved survival following NSTEMI due to improved reperfusion therapy and optimal medical treatment, yet STEMI mortality remains unchanged. This is likely because approximately two-thirds of STEMI patients die before they arrive in hospital to receive definitive treatment (ANZCOR, 2011). Therefore, acute pre-hospital care remains an essential component of ACS treatment.

Typically, ambulance services are called in the acute phases of CVD or IHD when a patient is experiencing acute or life-threatening symptoms of ACS; as such IHD and ACS will be a significant feature in this thesis. Despite stroke being the second largest cause of CVD mortality behind IHD (Roth et al., 2020), due to the differences in disease processes, presentation, treatment and recovery, stroke patients are not included in this research. Instead, it is limited to those who have experienced chest pain or cardiac symptoms and, as such, are likely to have experienced ischaemic heart disease (IHD). These symptoms may include pain, not limited to the chest, such as in the neck, shoulder, jaw, or arm, shortness of breath, palpitations, and dizziness or lightheadedness (Roth et al., 2020), with a focus on those who identify as Māori.

2.3 Māori and CVD

2.3.1 Māori rights to equitable health

Indigenous people are recognised as the descendants of persons who inhabited a specific geographical region or country when people of different cultures or ethnic backgrounds arrived (United Nations, n.d.). As a result of processes such as genocide and marginalisation, the original people of these areas are now dominated legally, culturally, economically and politically by the descendants of the newcomers (Reid et al., 2019). Despite seeking recognition for rights to their lands, territories, natural resources, identities, and way of life, as recognised by the United Nations Declaration on the Rights of Indigenous Peoples, the rights of Indigenous people are constantly violated (United Nations, 2007). Arguably Indigenous People are the most vulnerable and disadvantaged in society (United Nations, n.d.).

According to Article One of the United Nations Declaration on the Rights of Indigenous Peoples, “Indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights” (United Nations, 2007, p. 7). This includes the right to self-determination; the right to freedom from discrimination in exercising their rights, particularly those based on their Indigenous origins or identity; and the right to experience the highest attainable standard of mental and physical health. Māori, as the Indigenous people of NZ, have the right to equitable healthcare standards, quality, access and outcomes and the right to freely determine what health means and how it should be achieved. This includes the right to create and control priorities and strategies to acknowledge and exercise their right to health development.

Te Tiriti, which was negotiated and signed by both the Crown and Rangatira, re-affirms Māori tino rangatiratanga and protection of Māori taonga, including health, as well as outlines equitable citizenship for Māori (Berghan et al., 2017). The state's role in acknowledging and ensuring equitable health for Māori is recognised by both te Tiriti and the United Nations. As a result, current legislation should uphold and comply with obligations outlined in te Tiriti and support rights outlined in the United Nations Declaration on the Rights of Indigenous Peoples (Came et al., 2021; United Nations, 2007). The New Zealand Public Health and Disability Act 2000, a key health legislation in NZ, claims to acknowledge te Tiriti and places a legislative requirement on the

Ministry of Health to decrease health disparities for Māori (Came et al., 2021). Additionally, the Health Practitioners Competence Assurance Act 2003 outlines the legislative obligation of authorities to create and uphold standards of cultural competencies (cultural safety) that enables effective interaction with Māori.

However, significant inequities persist despite acknowledging the government's responsibilities under te Tiriti and the government claiming priority to address Māori health inequities (Berghan et al., 2017; Came et al., 2021). Research highlights that colonial health policies and systems forced upon Māori through the development of Western infrastructure are ineffective in addressing health inequities produced by colonisation as these are based solely on Western worldviews (Came et al., 2021). This was highlighted by the Waitangi Tribunal (2019), which determined that the NZHPDA and other health policies are not compliant with te Tiriti. Furthermore Came et al. (2021) found most NZ health policies utilise a standardised approach, reflecting the belief that colonial norms and ideologies are superior.

Indigenous people practice unique cultures, and ways of doing and relating to people and the environment while preserving social, cultural, economic, and political understandings. These are often distinct from dominant cultural practices and often misunderstood (United Nations, n.d.). To address inequities in society, the right for self-determination and for Indigenous people to "freely determine their political status and freely pursue their economic, social and cultural development," as stipulated by the United Nations Declaration on the Rights of Indigenous Peoples, must be upheld (United Nations, 2007, p. 8). Therefore to address Māori health inequities, Tino rangatiratanga must be recognised and maintained, and decisions about the design of healthcare, health policy and the prioritisation of resources need to be made with genuine Māori engagement through empowered Māori leadership (Came et al., 2020). For the Crown is to meet its goal of reducing health inequities as a prioritisation, in addition to recognising obligations under te Tiriti, implementation of appropriate interventions must also occur. For interventions to be appropriate, adopting kaupapa Māori methodology within research is needed to ensure research can adequately inform research outputs and reduce health inequities for Māori (Came et al., 2020).

The health of Māori is similar to that of nearly all Indigenous peoples globally and is characterised by systemic inequities, including disparities in exposure to poor DOH and inequitable access to social systems and healthcare, involving reduced quality of care, marginalisation and poor health workforce representation (Reid et al., 2019). As a result, inequities between Māori and non-Māori persist across almost all disease categories and health outcomes, despite existing legislation outlining the right to health equity and access to the highest attainable standard of health for Māori, as is reinforced by te Tiriti and the Declaration on the Rights of Indigenous Peoples.

Despite this, Māori experience significantly poorer health than non-Māori, have increased rates of disability despite an overall younger population, and have a higher amenable mortality rate. Additionally, life expectancy at birth is approximately seven years less for Māori than non-Māori (Ministry of Health, 2018b; Statistics New Zealand, 2015). Cardiovascular disease is a concerning health issue for Māori, and inequities in overall health status are significantly contributed to by the disproportionate effects of CVD for Māori compared to non-Māori (Chan et al., 2008; Grey et al., 2018a; Ministry of Health, 2015; Walsh & Grey, 2019). Potentially avoidable causes of death, such as CVD, have been identified as the cause of over half of all Māori deaths and are a prominent contributor to reduced life expectancy (Walsh & Grey, 2019). It is currently estimated that CVD contributes up to one year of the seven-year difference in life expectancy for Māori (Walsh & Grey, 2019).

2.3.2 Māori CVD inequities

The burden of CVD within NZ falls most heavily on Māori, with an age-standardised prevalence 67% higher than that of 'Other' New Zealanders in 2007 (Chan et al., 2008). Furthermore, the Ministry of Health (2015) reported that in 2012, the mortality rate from IHD was 106.2 deaths per 100,000 for Māori compared to just 58.0 deaths per 100,000 for non-Māori. Concerningly, Māori are more likely to experience and die from CVD at a much younger age than non-Māori, with the prevalence of CVD in Māori being 98% higher than other males aged 35-39 (Chan et al., 2008). Additionally, IHD, a major contributor to CVD deaths, accounts for 40.2% of Māori deaths under 65 compared to just 10.5% of non-Māori in the same age group (Ministry of Health, 2015). Furthermore, current literature outlines inequities in outcomes for Māori following a cardiac event. For example, Grey et al. (2016a) investigated ethnic

differences in case fatality associated with an acute IHD event, reporting an overall death rate of 25% of Māori compared to 21% of European patients despite being younger. Even after adjusting for potential confounders, the odds of death for Māori were 50% higher than for European/other patients. These findings are consistent with other literature highlighting that Māori experience poorer CVD outcomes than other ethnic groups in NZ (Chan et al., 2008; Curtis et al., 2010).

Given the prevailing inequities in CVD and many other health conditions and risks, it is evident that requirements under existing legislation are not being achieved. Also, the right to health equity and access to the highest attainable standard of health, reinforced by te Tiriti and the Declaration on the Rights of Indigenous Peoples, is not being met (Came et al., 2021; Curtis et al., 2019). This highlights the need to ensure effective interventions are deployed to address current inequities in health status for Māori. According to Selak et al. (2020), more research is required to adequately recognise and comprehend CVD inequities, including the contribution of healthcare access and quality of care received, to ensure effective interventions that promote equity and decrease the CVD burden for Māori.

2.3.3 Contributing factors to CVD inequities

The contributing factors underlying ethnic inequities in CVD health are multifaceted and complex, with many drivers relating to the unequal distribution of social and economic factors (Walsh & Grey, 2019). Jones (2001) suggests three main contributing pathways to ethnic inequalities in health. The first is differential access to DOH or exposures, leading to differences in disease incidence; the second is differential access to healthcare services; and the third is differences in the quality of care received.

Māori are more likely to experience inequitable exposure to poor DOH such as lower levels of educational, income, and employment status, as well as reduced health literacy and higher levels of deprivation (Ministry of Social Development, 2016). These factors result in both poor access to health-promoting resources, which delays care seeking and discourages good adherence to treatment (Walsh & Grey, 2019). Additionally, the differential access to DOH is patterned in other CVD risk factor exposures for Māori, for example, higher rates of binge drinking, smoking, and obesity

and lower levels of physical activity (Ministry of Social Development, 2016; Reid & Robson, 2007).

While it is evident that the socioeconomic circumstances in which people live are key influencers of health status, inequities persist even after catering for factors such as deprivation and socioeconomic status (Chan et al., 2008). Therefore, understanding differences in access to and quality of cardiovascular care for Māori remains crucial in addressing inequities in CVD outcomes for Māori.

2.3.4 Current CVD treatment inequities

It is widely recognised that a focus on prevention and treatment, involving primary and acute level care, is required to reduce the burden of CVD (Ministry of Health, 2018a). However, despite current best practice guidelines (outlined earlier in this chapter), Pharmac (2019) reported inequities in medication access and usage, impacting health outcomes, disease processes, and health risks between ethnic groups in NZ. Critically, Māori receive funded medicines in the community at a lower rate than non-Māori (Pharmac, 2019). Kerr et al. (2016) also reported long-term differences in the maintenance of statins and aspirin following ACS, with Māori being less likely to be dispensed these medications. Additionally, Māori are 1.5 times more likely than non-Māori to report experiencing unmet primary care needs, with 'cost' and 'inability to get appointments' reported as the main barriers to care (Ministry of Health, 2012). This growing evidence base on the differences in healthcare access between Māori and non-Māori highlights significant primary and secondary CVD prevention issues.

In addition, studies have reported that Māori patients are less likely to receive interventions such as angiography and revascularisation than NZ European patients and that differences can only be partially explained by the PCI capability of admitting hospitals and presence of comorbidities (Grey et al., 2016b; Kerr et al., 2014; Sandiford et al., 2015). Factors such as age, sex, and deprivation levels also do not explain treatment disparities (Westbrooke et al., 2001). Acute pre-hospital care is also an essential component of CVD care, particularly as prompt treatment for acute ACS events such as myocardial infarction is imperative, to decrease the chance of death and increase the potential benefit of treatment. Therefore, improving pre-hospital care is key in ensuring equity in access to and quality of CVD care for Māori.

2.4 Pre-Hospital Care and CVD

Pre-hospital ambulance services are usually called in the acute phases of IHD when a patient is experiencing acute or life-threatening symptoms of ACS. Thus, differential access to pre-hospital care and differences in the quality of care received are crucial influences of inequitable CVD outcomes for Māori. However, research shows that Māori experience inequitable access to pre-hospital defibrillation as well as experiences delays in reperfusion therapy and overall delays in accessing pre-hospital care (Dicker et al., 2019a; Garofalo et al., 2012; Kerr et al., 2019).

2.4.1 Defining pre-hospital care in Aotearoa, New Zealand

As a result of NZ's history of European colonisation, the provision, organisation, and regulation of the NZ pre-hospital emergency medical response system is based on the Anglo-American system (O'Meara & Duthie, 2018). As such, agencies or organisations employ paramedics and other first responders instead of physicians to respond by ambulance to medical emergencies. These first responders typically operate at levels from basic life support (BLS) through to intermediate (ILS) and advanced life support (ALS) and are increasingly encouraged and expected to practice autonomously (O'Meara & Duthie, 2018). In November 2019, paramedic registration under the Health Practitioners Competence Assurance Act 2003 was announced, and in January 2020, paramedics within NZ were formally recognised under this Act (Kaunihera Manapou, n.d.).

Within the EMS workforce in NZ, ambulance staff practice at various clinical practice levels that are set and outlined through application of clinical practice guidelines (CPGs) by employers (Australian Paramedical College, n.d.; O'Meara & Duthie, 2018; Wilkinson-Stokes, 2021). These practice levels include emergency medical technicians (EMTs) who hold a diploma in BLS and currently practice as unregistered practitioners, as well as registered practitioners, including paramedics, who hold a bachelor’s degree. There are also critical care paramedics (CCPs) and extended care paramedics (ECPs) who hold a post-graduate qualification (Australian Paramedical College, n.d.; O'Meara & Duthie, 2018; Wilkinson-Stokes, 2021). Registration status in NZ is unique in that outside of practising in the two established Ambulance Services within NZ, there are no nationally agreed scopes of practice (O'Meara & Duthie, 2018; Wilkinson-

Stokes, 2021). In addition to the above practicing levels, ambulance services also employ a range of other personnel who assess, treat, or transport patients, with a proportion of these being volunteer ambulance officers and first respondents who often work within smaller rural or remote areas. Typically, volunteers work alongside paid BLS or ILS-trained staff and generally fall outside the agreed scope that currently requires registration (O'Meara & Duthie, 2018). While it is not uncommon for healthcare institutes such as hospitals and primary health organisations (PHOs) to involve volunteers in providing some services, EMS is unique in training and authorising volunteers to provide front-line medical care (O'Meara & Duthie, 2018).

Hato Hone St John, is NZ's main ambulance service, and provides EMS coverage to almost the entire country except for the Wellington and Wairarapa regions. They serve 90% of the population and responded to 498,605 patients in 2022 (Hato Hone St John, 2022). Hato Hone St John is unique from many other worldwide ambulance services in that it is a registered charity, with approximately 78% of the ambulance service operating costs being funded by investment and support from government agencies and contracts with Te Whatu Ora, Accident Compensation Corporation (ACC), and District Health Boards (DHBs). The remaining 22% of operating costs are covered through donations, fundraising, income from emergency ambulance part charges ($98 per ambulance call out), other transportation services, and revenue from medical alarm activities (Hato Hone St John, 2022).

Hato Hone's workforce comprises a mixture of volunteers and paid staff with varying practice levels outlined within the CPGs and issued by the Medical Director. Each practice level has a delegated scope of practice, which dictates the interventions that can be performed and medicines that personnel can administer (National Ambulance Sector Clinical Working Group, n.d.). The principles of CVD treatment outlined within the CPGs generally follow the principles outlined by the Australian New Zealand Council on Resuscitation (ANZCOR) guidelines, which provide recommendations based on scientific evidence (ANZCOR, 2016a, 2016b). All personnel follow written guidelines within the CPGs, which provide direction for staff to make assessment, treatment, and transport decisions autonomously (National Ambulance Sector Clinical Working Group, n.d.). All participants included in this research live in regions serviced solely by Hato Hone St John.

2.4.2 Inequities in accessing pre-hospital CVD care and resource

Early access to emergency care, particularly for time-sensitive conditions, is crucial to reducing population morbidity and mortality (Farcas et al., 2022). This makes access to acute pre-hospital care is undoubtedly a crucial component of CVD care. However, differences in access to care, treatment, and outcomes persist and often reflect social inequalities (Farcas et al., 2022).

Within NZ, inequities in accessing care exist for Māori across the health system. This is evident in the pre-hospital context as Māori who experience ACS are less likely to go to the hospital by ambulance (Garofalo et al., 2012). Furthermore, even those who go by ambulance often delay calling 111 or present to their General Practitioner (GP) or an accident and medical centre. This results in delayed ambulance transfer to hospital and access to definitive care such as reperfusion therapy. This affects outcomes and recovery, as well as increases delays to defibrillation, which is critical as prompt defibrillation improves outcomes for patients with ACS if patients deteriorate to cardiac arrest and improves survival rates in OHCA (Dicker et al., 2019a; Garofalo et al., 2012; Kerr et al., 2019).

The most critical modifiable delay in accessing pre-hospital care for patients experiencing cardiovascular symptoms is the delay in seeking care. While delays in seeking care are thought to be caused by cultural, financial, and educational factors, no research in the NZ pre-hospital context currently investigates this further (Garofalo et al., 2012). This highlights the importance of understanding the barriers that prevent patients from calling an ambulance early as currently, it is unknown why this delay occurs and, consequently, how it can be improved (Garofalo et al., 2012). By understanding access to and quality of care, including experiences of care, when utilising pre-hospital care we can begin to address this issue.

2.4.3 Pre-hospital workforce and inequities

A recent American-based scoping review summarised existing literature on disparities in pre-hospital care for patients belonging to non-dominant or underrepresented social groups. It found that inequities exist throughout various phases of EMS care delivery (Farcas et al., 2022). Furthermore, a high proportion of studies included in this review reported that non-White patients who experienced symptoms of ACS were less

likely to access EMS care for these symptoms. While this review concluded that although education and health literacy might play a role in reduced care seeking, distrust was also highlighted as an additional barrier to accessing EMS. The review concluded that although the underlying causes of disparities are complex, multifactorial, and closely intertwined with DOH, clinician biases, whether conscious or unconscious, are likely to play a critical part in pre-hospital care inequities (Farcas et al., 2022).

Undisputedly, the quality of care received by patients throughout primary, in-hospital and pre-hospital care is directly impacted by the staff within these sectors. Like other healthcare professions, significant underrepresentation of Māori occurs throughout NZ's Emergency services (EMS) workforce. As such, only 4.3% of EMS personnel identified as Māori in 2014, despite Māori making up more than 15% of NZ's overall population (Morrison & Tunnage, 2014). Furthermore, this study also reported that over five years, Māori accounted for only 7.5% of enrolments within tertiary paramedic education (Morrison & Tunnage, 2014). To deliver culturally safe, equitable and appropriate care, it is essential that a workforce accurately represents the community that it serves (Cooper & Powe, 2004; LaVeist et al., 2003; Takeshita et al., 2020); however, in NZ, the EMS workforce currently does not.

In addition, interpersonal and systemic racism are increasingly recognised as important DOH contributing to ethnic inequities (Jones, 2001; Reid & Robson, 2007; Reid et al., 2000). Notably, inequities are linked to poor experiences in healthcare due to unequal partnerships, ineffective communication, and lack of empowerment, respect, and trust (Reid & Robson, 2007). Research in other areas of health has previously highlighted that the relationship between Māori and practitioners is often influenced by bias, assumptions, and the predetermined notion that some practitioners have about Māori (Cram et al., 2003; Wilson & Barton, 2012). Furthermore, in 2011/2012, Māori were five times more likely to report experiencing racism by a health professional (Harris et al., 2019). Critically, this study also demonstrated a link between experiences of racism, higher unmet needs, and lower satisfaction. This results in culturally unsafe care, which frequently leads to negative patient-practitioner interactions, resulting in poorer patient outcomes and a reluctance to engage with ongoing healthcare (Cram et al., 2003; Harris et al., 2019; Harris et al., 2006; Wilson & Barton, 2012).

2.5 Cultural Safety

Research across health disciplines has demonstrated that implementing cultural safety, a term introduced in the 1990s by Dr. Irihapeti Ramsden and Māori nurses (Papps & Ramsden, 1996), can enhance clinical care by highlighting assumptions and bias and addressing power imbalances within healthcare (Curtis et al., 2019). As a result, cultural safety is increasingly recognised in health legislation, health professional regulating and accreditation standards, health training programs, and tertiary education due to its potential to achieve health equity (Curtis et al., 2019). Cultural safety is achieved through healthcare professionals and associated organisations examining themselves and considering the potential impact their culture may have on clinical interactions and the quality of healthcare delivery (Marcelin et al., 2019). Consequently, individual healthcare professionals and organisations must acknowledge and address the biases that may impact the quality of care provided particularly for Indigenous populations and other minority groups (Hall et al., 2015; Marcelin et al., 2019; van Ryn et al., 2011). This requires ongoing self-reflection, self-awareness, and accountability to ensure the provision of culturally safe care, as defined by the patient and their communities (Curtis et al., 2019; Marcelin et al., 2019).

Critically, while it is clear that health practitioners have limited abilities to determine patients' access to DOH, it is within a practitioner's scope to ensure patients' rights to receive responsive, high-quality, and culturally safe healthcare are being met (Miner-Williams, 2017). This thesis will utilise concepts of cultural safety to better understand the experiences of cultural (un)safety for Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics.

2.6 Summary

This chapter has provided a relevant background to the research, including outlining incidence of and treatment pathways for CVD within NZ. Ethnic disparities in CVD outcomes were also outlined, highlighting the disproportionate burden of CVD for Māori, whereby Māori are more likely to experience and die from CVD at a much younger age than non-Māori. The causes of these inequities are complex and multifactoral and persist despite policy, te Tiriti, and other legislative obligations

highlighting a need to reduce health disparities for Māori. Furthermore, an outline of the pre-hospital context in NZ was provided which highlighted inequities that exist for Māori regarding accessing pre-hospital CVD care.

The significant inequities in CVD incidence and mortality for Māori coupled with evidence that demonstrates reduced or delayed engagement of Māori with ambulance services for cardiac issues highlights the need for further and targeted investigation, including exploration of the experiences of Māori who have received acute pre-hospital care for cardiac symptoms from paramedics.

Chapter 3 Narrative Review (Manuscript 1)

3.1 Introduction

This chapter consists of a manuscript ready for publication and will focus on current knowledge around ethnic disparities for Māori. It will present evidence on current understandings of the disparities within outcomes between Māori and non-Māori that were discussed in chapter two, highlighting gaps in the current knowledge systems and evidence to support the overall aims, questions, and approach of this research.

The causes and contributing factors of health inequities across ethnicities are multifaceted and complex. Different exposures and experiences contribute to poorer health and inequities, particularly avoidable mortality, across diverse populations (Walsh & Grey, 2019). Thus, the causes of inequity in CVD outcomes are multifactorial. They are known to include differential exposure to CVD risk factors, social and economic factors, such as deprivation, and, more importantly, unequal access to healthcare that is culturally inappropriate (Walsh & Grey, 2019). It is also well documented that healthcare is set in Western paradigms, thus resulting in poor experiences and, ultimately, poor health for Māori (Wilson, 2008; Wilson & Barton, 2012). After primary prevention, acute CVD requires 'first response' by the health system to CVD symptoms and signs, ensuring that people receive timely, effective CVD care. This means pre-hospital ambulance care plays a vital role in the management of CVD, including contribution to inequities that currently exist in this space for Māori.

The following narrative review is included to understand what body of knowledge currently exists regarding access to and quality of emergency medical services (EMS) cardiovascular care for Māori and whānau. It has been composed for submission to the Australian and New Zealand Journal of Public Health and is presented largely as it will be submitted, except for minor edits and formatting changes to maintain consistency throughout the thesis. It was submitted July 7, 2023, and returned July 13, 2023. It will be revised and re-submitted in 2024.

Access to, and quality of, emergency medical services cardiovascular care for Māori: a narrative review.

3.2 Abstract

Objective:

This review aimed to synthesise evidence on access to, and quality of, emergency medical services (EMS) cardiovascular care for Māori by (i) determining if inequities exist in cardiovascular disease (CVD) outcomes and access to CVD care in an EMS context in Aotearoa New Zealand (NZ) and (ii) identifying Māori experiences of accessing EMS care for cardiac symptoms.

Methods:

A narrative review of the literature was conducted using online databases Cochrane Library via OVID, PubMed, CINAHL Plus, Medline via OVID and Scopus. Papers were appraised using consolidated criteria (CONSIDER) for strengthening reporting of health research involving Indigenous people.

Results:

Five articles described inequities in CVD outcomes and access to CVD care in an EMS context in NZ. Zero articles explored the experiences of Māori accessing EMS care for cardiac symptoms.

Conclusions:

There are gaps in understanding the relationships between access to, outcomes and experiences of EMS care for Māori. There is a pressing need for targeted research to understand these relationships. Understanding Māori experiences of EMS care can allow for targeted improvements in the cultural appropriateness of EMS care for Māori.

3.3 Background

Māori health and inequities in cardiovascular care in NZ

Cardiovascular diseases account for 40% of all deaths and 17% of health loss for people living in NZ (Ministry of Health, 2015, 2016b). However, the burden of CVD within NZ is not evenly distributed, with disproportionately more deaths occurring in Māori, the Indigenous people of NZ. In 2012, the mortality rate from ischaemic heart disease (IHD) was 106.2 deaths per 100,000 for Māori compared to 58.0 deaths per 100,000 for non-Māori. Additionally, Māori are more likely to experience and die from CVD at a much younger age than NZ Europeans (NZE). IHD, a major contributor to CVD deaths, accounts for 40.2% of Māori deaths under the age of 65 compared to 10.5% of NZE in the same age group (Ministry of Health, 2015). Furthermore, CVD contributes up to one year of the seven-year difference in life expectancy for Māori (Walsh & Grey, 2019). Given this increased burden, CVD remains a health priority for Māori.

The contributing factors underlying ethnic inequities in CVD health are multifaceted and complex (Walsh & Grey, 2019) but, in general, can be grouped into three categories, including differential exposure to determinants of health (DOH); differential access to healthcare services; and differences in the quality of care received (Jones, 2001). Māori are more likely to experience inequitable exposure to poor DOH, such as reduced health literacy, education, income, and higher levels of deprivation (Ministry of Social Development, 2016). These factors result in poor access to health-promoting resources and delayed care and access to treatment (Walsh & Grey, 2019). While it is evident that socioeconomic circumstances are key influencers, inequities persist even after catering for factors such as deprivation (Chan et al., 2008). Differential access to health services and differences in quality of care received are crucial factors in understanding inequities in CVD outcomes for Māori (Chan et al., 2008; Grey et al., 2014)

Research has demonstrated that Māori are less likely to receive primary prevention for CVD (Grey et al., 2014) and interventions such as angiography and revascularisation than NZE patients (Grey et al., 2016b; Kerr et al., 2014; Sandiford et al., 2015). These differences in access to revascularisation can only be partially explained by the percutaneous coronary intervention (PCI) capability of admitting hospitals and the

presence of comorbidities (Grey et al., 2016b; Kerr et al., 2014; Sandiford et al., 2015). Factors such as age, sex, and deprivation levels also do not explain treatment disparities (Westbrooke et al., 2001).

One key step between primary care and secondary intervention is the diagnosis and treatment of acute CVD events by EMS. EMS staff play a key role in ensuring equity in access to, and quality of healthcare. Prompt treatment for acute coronary syndrome (ACS) events is important as it decreases the likelihood of death and increases the potential benefit of treatment (Kerr et al., 2019). Despite its significance in CVD care and outcomes, there is little information about EMS in the NZ context. The objective of this literature review was to synthesise evidence on access to, and quality of, EMS CVD care for Māori, by (i) determining if inequities exist in CVD outcomes and access to CVD care in an EMS context in NZ, and (ii) identifying Māori experiences of accessing EMS care for cardiac symptoms.

3.4 Methods

A narrative literature review was conducted (Greenhalgh et al., 2018). A structured approach to the literature search was used based on the principles of PRISMA (Page et al., 2021). The Consolidated Criteria for Strengthening Reporting of Health Research involving Indigenous Peoples (CONSIDER statement) (Huria et al., 2019) was used to appraise the quality of the included studies, and an inductive thematic approach was used to synthesise findings.

3.4.1 Search strategy and screening

The principles of PRISMA were applied to the screening and search strategy, including a systemic database search, mapping of the number of records identified, included, and excluded, the reasons for exclusions, and dual screening to reduce selection bias.

Five electronic databases were searched, including Cochrane Library via OVID, PubMed, CINAHL Plus, Medline via OVID and Scopus, to identify articles that discussed access to, and quality of, EMS cardiovascular care for Māori. Search terms were developed to include studies that reported both inequities in outcomes and access to CVD care in an EMS context in NZ and articles that reported Māori experiences of accessing EMS care for cardiac symptoms. The systematic search was organised

around four categories: (1) EMS, (2) Māori, (3) CVD, and (4) inequities, outcomes, access, and experiences (see Table 3-1.). The database searches were limited to studies between January 2003 and January 2023. This date was chosen to maximise possible literature while ensuring relevancy.

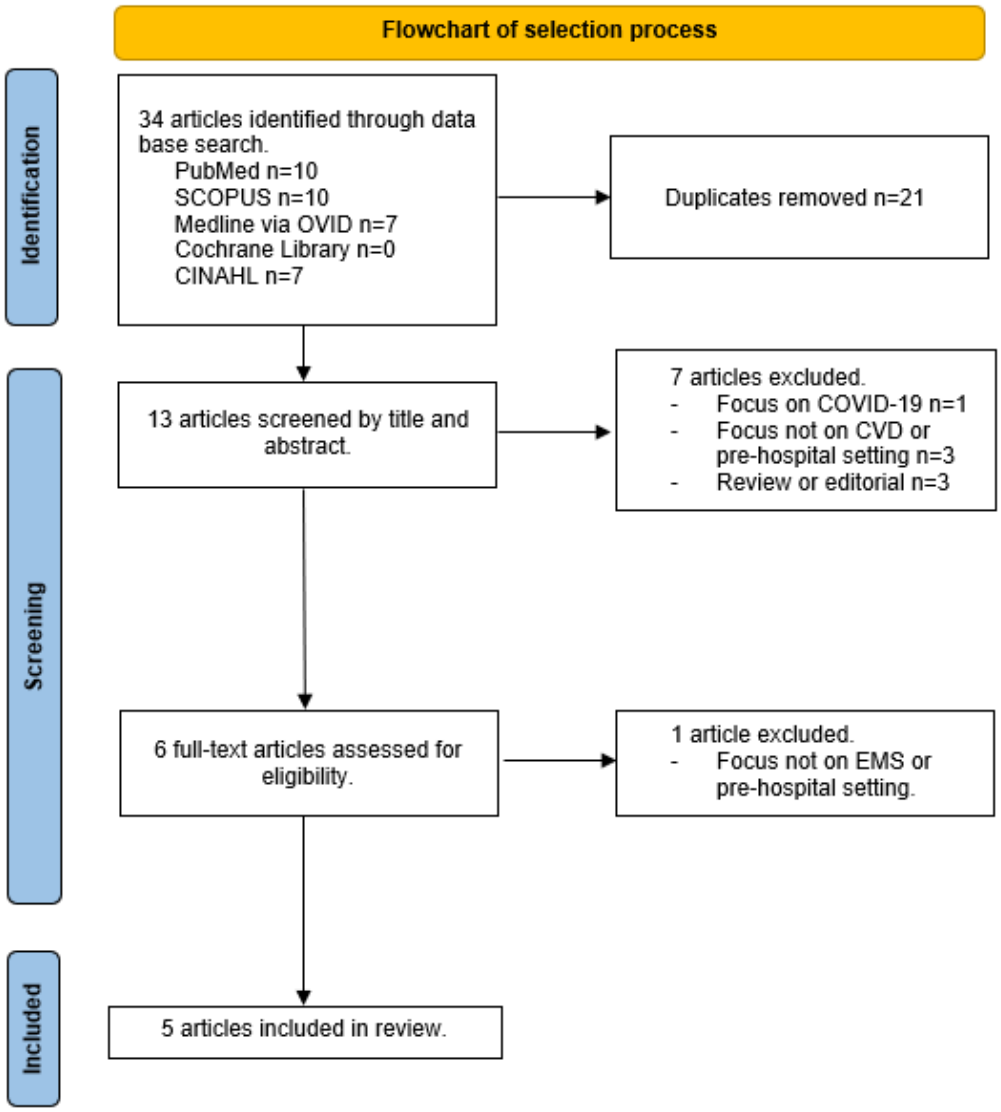
Table 3-1. Search terms

	SEARCH TERMS
S1	"emergency medical services" OR EMS OR ambulance OR "emergency care" OR paramedic* OR "pre hospital" OR "out of hospital" OR pre-hospital OR "emergency medical technician" OR EMT
S2	Māori OR Maori OR Indigenous
S3	Cardiac OR heart OR cardiovascular OR coronary OR CVD
S4	Inequity OR Access OR Outcome OR barrier OR Quality or Attitude* OR Belief* OR Experience* OR Opinion* OR Perception* OR Perspective* OR Satisfaction OR Value* OR View
S5	Inequity OR Access OR Outcome OR barrier OR Quality or Attitude* OR Belief* OR Experience* OR Opinion* OR Perception* OR Perspective* OR Satisfaction OR Value* OR View
S6	S1 AND S2 AND S3 AND S4 AND S5
S7	Filter: January 2003 to January 2023

Studies were included if they (i) reported separate data analysis for Māori and non-Māori participants relating to outcomes or access to CVD care in an EMS context, or (ii) reported on Māori experiences of accessing EMS care for cardiac symptoms. Studies were excluded if they (i) focussed on chronic care, (ii) focussed on community or in-hospital interventions/care, (iii) had a large COVID-19 focus, (iv) included Māori participants but did not provide separate data analysis for Māori and non-Māori participants, or (vi) were review articles or editorials.

Three authors (SP, BD, MH) were involved in the study selection procedure, the preliminary search, identification of search terms, systematic database searches, and title and abstract screening. An Excel spreadsheet was used to manage the articles. After removing duplicates, titles, and abstracts were screened against the inclusion and exclusion criteria and were removed accordingly. The remainder were subjected to full-text assessment (see Figure 3-1.).

Figure 3-1. Flowchart of selection process



3.4.2 Research quality appraisal

Despite the significant CVD inequities amongst Māori and the potential for research to address these, colonial research has historically exploited Indigenous Peoples by inappropriately obtaining, analysing, and representing Indigenous knowledge through Western paradigms. Promoting the idea that researchers can be experts in all things Māori despite only brief encounters (Huria et al., 2019; Smith, 2012). Collection and analysis of Indigenous health data is necessary to understand and address health inequities. However, research involving Indigenous participants must distinguish how systemic racism within research perpetuates systems that contribute to these inequities (Haitana et al., 2020; Huria et al., 2019; Reid et al., 2019). Thus, the CONSIDER statement, which aims to enhance the practice and reporting of research

involving Indigenous people to support health equity, was used to appraise the quality of included research (Huria et al., 2019).

The CONSIDER statement provides a checklist including eight research domains, with 17 associated criteria, the domains being: governance; relationships; prioritisation; methodologies; participation; capacity; analysis and findings; and dissemination (Huria et al., 2019). Table 3-2 presents the domains addressed by the included studies. This enabled the researcher to establish the quality of these studies concerning Indigenous priorities; appropriateness of research practices; and the degree to which responsive, equitable, and ethical health research practices were used, and whether collaboration between researchers and Māori individuals/organisations occurred (Meredith et al., 2023; Wright et al., 2022).

3.4.3 Analytic approach

This review used an inductive thematic approach to analyse data (Thomas & Harden, 2008). Data extraction to synthesise studies was completed in three stages. First, all studies were read multiple times to ensure a thorough understanding of the aims, methods, and findings. Specific focus was placed on the results sections to extract and collect statements and numerical data to summarise each study. Categories were then created based on similarity, using the collected statements and data to draft themes across the studies. Lastly, themes were synthesised and finalised into three. All themes related to inequities in CVD outcomes and access to CVD care in an EMS context in NZ. No themes were able to be produced regarding Māori experiences of accessing EMS care for cardiac symptoms. A synthesis of the findings is described below.

3.5 Results

A total of 34 records were identified, with 13 screened for eligibility after removal of duplicates and six included for full-text review (see Figure 3-1). Five were included in this review, spanning publication between 2012 to 2019. Three of the five articles focused on out-of-hospital cardiac arrest (OHCA); one focussed on ethnic disparities and outcomes in OHCA (Dicker et al., 2019b); another focussed on inequities and outcomes in relation to direct transport to PCI-capable hospitals after OHCA (Dicker et al., 2019c); and the final one investigated relationship between socioeconomic factors, distribution of PADs and incidence of OHCA (Dicker et al., 2019a). The remaining two

articles discussed ‘patient’ and ‘system’ delays for patients who receive acute reperfusion therapy for STEMI (Kerr et al., 2019) and pre-hospital delays in patients with ACS admitted to CCU (Garofalo et al., 2012) (see Table 3-2.).

Table 3-2. Included articles on inequities in cardiovascular disease (CVD) outcomes and access to CVD care in an EMS context in NZ.

AUTHOR, YEAR	AIMS	METHOD	POPULATION	OUTCOME MEASURED	CONSIDER DOMAINS (14)
DICKER ET AL., 2019A	To investigate disparities between incidence of OHCA and outcome across different ethnic groups in NZ.	Retrospective observational study utlising data from the Hato Hone St John NZ OHCA registry.	Included all OHCA events that occurred between November 2016 to 31 October 2018.	Incidence of OHCA, population characteristics and OHCA outcomes including Return of Spontaneous Circulation (ROSC) sustained to hospital handover and survival at 30 days. Compared between ethnic groups including Māori.	Prioritisation - identified how research aims emerged from empiric evidence. However, no recognition of inclusion of Indigenous stakeholders in the prioritisation process. Relationship - include Indigenous authors but not Indigenous research or advisory groups.
DICKER ET AL., 2019B	To compare the characteristics and outcomes of patients following an OHCA within NZ based on whether they were transported to hospitals with or without PCI-capability.	Retrospective cohort study utlising data from the Hato Hone St John NZ OHCA registry.	Included all adults that were treated for an OHCA presumed to be of cardiac aetiology by Hato Hone St John between 1 October 2013 and 31 October 2018.	The outcome differences in survival at 30 days post OHCA based on PCI-capability of receiving hospital. Compared between ethnic groups including Māori.	Prioritisation - identified how research aims emerged from empiric evidence. However, no recognition of inclusion of Indigenous stakeholders in the prioritisation process.
DICKER ET AL., 2019C	To determine whether there was a relationship between socioeconomic status, the geographic distribution of PADs and incidence of OHCA.	Descriptive, cross-sectional, geospatial study of location of PADs, incidence of OHCA and population characteristics.	Included all OHCA events (11537) attended to by Hato Hone St John NZ between 1 October 2013 to 30 June 2016.	Relationships between SES, geographical distribution of PAD and incidence of AEDs. Compared between ethnic groups including Māori.	Prioritisation - identified how research aims emerged from empiric evidence. However, no recognition of inclusion of Indigenous stakeholders in the prioritisation process.
KERR ET AL., 2019	To describe the 'patient' and 'system' delays in patients who have received acute reperfusion therapy for STEMI in NZ.	Retrospective cohort study using data from the All New Zealand Acute Coronary Syndrome Quality Improvement (ANZACS-QI) registry. All	3,857 patients who received acute reperfusion therapy between 2015 and 2017 were included.	Patient delay which is defined as the time from symptom onset to FMC, as well as system delay which is defined as the time from FMC until commencing reperfusion	Prioritisation - identified how research aims emerged from empiric evidence. However, no recognition of inclusion of Indigenous stakeholders in the prioritisation process.

		patients receiving coronary angiography after a STEMI within NZ are captured in this registry.		therapy (either PCI or fibrinolysis) Compared between ethnic groups including Māori.	Relationship - include Indigenous authors but not Indigenous research or advisory groups.
GAROFALO ET AL., 2012	To study the components and determinants of pre-hospital delays in patients with ACS who were admitted to Middlemore Hospital Coronary Care Unit (CCU)	Data sourced was from the ambulance patient report form and the clinical notes and selected data that was recorded in the Acute Predict data set was also used, including patient demographics such as age, gender, and ethnicity.	All patients with a final diagnosis of ACS that were admitted to Middlemore Hospital's CCU from the community between 1 January 2009 and 31 July 2010. were included.	Investigated across population and diagnostic groups, the differences in the time between symptom onset and the availability of defibrillation. Included a comparison between ethnic groups including Māori.	Prioritisation - identified how research aims emerged from empiric evidence. However, no recognition of inclusion of Indigenous stakeholders in the prioritisation process.

3.5.1 Research quality appraisal

Following an appraisal of studies using the CONSIDER checklist, it was clear that the only aspect consistently recognised in all articles was how research aims emerged. However, this satisfied only a portion of the prioritisation domain, as the inclusion of Indigenous stakeholders in the prioritisation process was not identified in any of the studies. The relationship domain was identified in two articles as they included Indigenous team members/authors (Dicker et al., 2019b; Kerr et al., 2019); however, no description of the expertise of the research team or of individuals in the conduct of Indigenous research was provided. Additionally, identification of approval from Indigenous organisations/boards or involvement of Indigenous research units or advisory groups were not specified.

3.5.2 Main findings

All five articles included in this review described inequities in CVD outcomes or access to CVD care for Māori in an EMS context in NZ. No article covered Māori experiences of accessing EMS care for cardiac symptoms.

Out-of-hospital cardiac arrest was the focus of three of the five articles (Dicker et al., 2019a; Dicker et al., 2019b; Dicker et al., 2019c); these studies all utilised data from the Hato Hone St John OHCA registry, which contains data for all OHCA attended to by Hato Hone St John nationwide, except for the Wellington region. One of the remaining two articles (Kerr et al., 2019) focussed on patients who received acute reperfusion therapy for STEMI, utlising data from the ANZACS-QI registry between 2015-2017 (Williams et al., 2016). The final article (Garofalo et al., 2012) focussed on pre-hospital delays in patients with ACS admitted to Middlemore Hospital's CCU.

Inequities in CVD outcomes and access to CVD care for Māori in the EMS context.

There are clear disparities in OHCA incidence, characteristics, return of spontaneous circulation (ROSC) and thirty-day survival for Māori in NZ (Dicker et al., 2019b). From November 2016 to October 2018, Māori experienced an increased incidence of OHCA, with an age-adjusted incidence per 100,000 of 144.4 compared with 93.8 for European/other. Additionally, these occurred at younger ages, with a higher proportion of occurring between 0-64 years. Critically, the odds-adjusted ratio for ROSC sustained to hospital and thirty-day survival was lower for Māori than

European/Others (0.74 and 0.61, respectively). Thus, significant inequities in outcomes exist for Māori regarding OHCA, whereby Māori experience much poorer survival rates than non-Māori (Dicker et al., 2019b).

Three overarching themes were identified in this review regarding disparities in access to CVD care for Māori in the EMS context; details are expanded below.

Delay/inequities in accessing defibrillation.

Prompt access to defibrillation improves outcomes for patients with ACS if patients deteriorate to cardiac arrest and improves survival rates in OHCA (Dicker et al., 2019a; Garofalo et al., 2012; Kerr et al., 2019). However, there are significant pre-hospital delays between symptom(s) onset to FMC with defibrillation capability for Māori with ACS, as well as reduced availability of PADs (Dicker et al., 2019a; Garofalo et al., 2012).

In a study measuring pre-hospital delay in ACS, the median delay from symptom onset to defibrillator availability was an hour longer for patients from areas of greatest deprivation (149 min) compared to less deprived areas (208 min) (Garofalo et al., 2012). Given that Māori are more likely than non-Māori to live in areas of high deprivation, this delay is more likely to affect Māori patients (Ministry of Health, 2018c). Furthermore, the median delay to defibrillator availability was 7 hours longer for non-ambulance transported patients compared to ambulance transported patients (553 vs 130mins). Māori were less likely to travel to hospital by ambulance, increasing the delay to defibrillation (Garofalo et al., 2012).

Māori and those living in areas of high deprivation in NZ also have inequitable availability to PADs (Dicker et al., 2019a). Critically, although the incidence of OHCA in areas of highest deprivation was double the incidence of OHCA in areas of lowest deprivation (156.5 events vs. 78.0 per 100,000 person years), highly deprived areas had the poorest coverage of registered PADs (65%). Notably, with each one percent increase in the proportion of Māori within a Census Area Unit (CAU), an increase in OHCA rate of one percent was observed. Furthermore, in 2013, the decile 10 CAUs without PADs contained a higher proportion of Māori compared to the general NZ population (34% and 38%, respectively) (Dicker et al., 2019a). Consequently, less community defibrillation occurs for Māori OHCA (8.2%) compared to European/Others (11%) (Dicker et al., 2019b).

Delay to Reperfusion

Timely reperfusion therapy (either primary PCI or fibrinolysis) to open occluded arteries significantly improves outcomes of STEMI (Kerr et al., 2019). Furthermore, survival from OHCA is likely improved through direct transfer of patients to PCI-capable hospitals (Dicker et al., 2019c).

When comparing patient characteristics and outcomes following OHCA between patients transported to hospitals with or without PCI-capability, significant differences in facilities at receiving hospital were found for Māori, affecting overall survival. Māori had the lowest proportion of transport to hospitals with PCI-capability (32.9% compared to 55.6% of NZE). Additionally, a higher proportion of patients whose OHCA occurred in urban areas were transported to a facility with PCI-capability compared to those in rural areas, with Māori being more likely than other ethnicities to live rurally (Dicker et al., 2019c). Furthermore, Māori were more likely to receive fibrinolysis, as fibrinolysis is more dominant in smaller non-metropolitan hospitals without the resources to perform primary PCI (Kerr et al., 2019). Critically, a larger proportion of patients survived after transport to hospitals with PCI-capability (56.5%) compared with those transported to hospitals without (43.5%) (Dicker et al., 2019c).

Delay to accessing EMS care.

The time before FMC is the most dangerous for patients experiencing ACS as they are at risk of arrhythmias and cardiac arrest; however, are not under EMS care (Dicker et al., 2019a; Garofalo et al., 2012; Kerr et al., 2019). Delays in accessing EMS have been reported as significantly longer in Māori compared to non-Māori, thus impeding early access to defibrillation and reperfusion (Garofalo et al., 2012; Kerr et al., 2019).

Research using the ANZACS-QI registry found that delays from symptom onset to FMC of more than 60 minutes occurred in almost half of all patients with ACS who underwent reperfusion. This delay was more common for Māori and those who did not call EMS. Specifically, delays of more than an hour were more frequent for Māori (Kerr et al., 2019). Consequently, delays for Māori in accessing FMC meant delays in the availability of potentially lifesaving defibrillation and delays to reperfusion therapy for those experiencing STEMI (Garofalo et al., 2012).

Delays were attributed, in one study, to the finding that Māori were less likely to travel by ambulance than NZE patients (66% vs 85%) (Garofalo et al., 2012). However, another study reported that, after adjusting for covariates, ethnicity did not solely predict the mode of transport, even though Māori were slightly less likely to travel by ambulance than non-Māori. Māori are also more likely to live in rural areas, which may account for the insignificant ethnic differences in ambulance transport adjusting for covariates (Kerr et al., 2019). Additionally, Māori often present to their physician or an accident and medical centre (A&M) first, delaying ambulance transfer and increasing overall time to definitive care. For those transferred by ambulance, the most significant contributor to the delay was the time between symptom onset and calling EMS (Garofalo et al., 2012).

Māori experiences of accessing EMS for cardiac symptoms.

Despite using a large subset of keywords, we did not identify any research articles on this topic. This is a significant gap, given that quantitative data shows inequities in EMS and other pre-hospital care for cardiac symptoms (Garofalo et al., 2012; Kerr et al., 2019).

3.6 Discussion

This narrative review used systematic search methods to synthesise evidence on access to, and quality of, EMS care for Māori with cardiac symptoms.

A key strength of this review was the appraisal of articles using the CONSIDER statement to demonstrate reporting of Indigenous participation, partnerships, and Indigenous-led and controlled research (Huria et al., 2019). Historically, colonial research has disempowered Māori by implying that any disadvantage is their own fault (Bishop, 1995), contributing to marginalisation, oppression, and cultural inferiority (Mahuika, 2008). The quality of all research included in this review was appraised and reported with regards to being strengths-based, anti-racist, and de-colonising using the CONSIDER statement (Huria et al., 2019). None of the included studies described governance or partnership with Indigenous stakeholders. This suggests either an absence or lack of reporting of Indigenous participation. Although common in research involving Indigenous peoples, this raises concerns about the prioritisation of the research and appropriateness of data collection, interpretation, and reporting of

research (Huria et al., 2019). Furthermore, the studies did not outline the use of Indigenous methodologies, research capacity, and dissemination to Indigenous stakeholders. This is vital as Indigenous research should be meaningful and serve to benefit Indigenous communities.

Out-of-hospital cardiac arrest is more common in Māori than non-Māori and occurs at younger ages, yet Māori experience much lower survival rates. Despite the higher incidence of OHCA for Māori, areas within NZ without PADs contained a higher proportion of Māori compared to the general NZ population. Thus, community defibrillation for OHCA occurs less frequently for Māori. Another important finding in this review was delays in accessing EMS care, as these are directly linked to delays in defibrillator availability and reperfusion therapy. Clearly, not only do inequities in access to, and quality of, EMS cardiovascular care for Māori exist, but research regarding Māori in this context is sparse.

Overall, there were longer delays between the onset of symptoms and FMC for Māori patients experiencing ACS. This included Māori being more likely to self-transport to hospital or an increase in Māori presenting to their physician or A&M centre before being transported by ambulance. The lower rate or delay in EMS contact, based on ethnicity, is likely due to cultural, financial, and educational factors (Garofalo et al., 2012). The most critical modifiable delay for patients experiencing cardiovascular symptoms is the delay in seeking EMS care (Garofalo et al., 2012). Focussed action is required to reduce the barriers that prevent patients from calling EMS early (Kerr et al., 2019). However, no research exists regarding Māori experiences of accessing EMS care for cardiac symptoms. Consequently, it is unknown why this delay occurs and, thus, how it can be improved.

Interpersonal and systemic racism are increasingly being recognised as important DOH contributing to ethnic inequities, including the contribution of health systems, services, and practitioners (Jones, 2001; Reid & Robson, 2007; Reid et al., 2000). Notably, inequities have been linked to poor experiences in healthcare due to unequal partnerships, ineffective communication, and lack of empowerment, respect, and trust, as opposed to a lack of cultural knowledge (Reid & Robson, 2007). Research in other health areas regarding Māori experiences of Māori has previously highlighted

that the relationship between Māori and practitioners throughout the health system is fundamental to Māori (Mbuzi et al., 2017). These relationships are often influenced by bias, assumptions, and the predetermined notion that some practitioners have about Māori, whereby they do not acknowledge the determining cultural worldviews of Māori (Cram et al., 2003; Wilson & Barton, 2012). Additionally, feelings of alienation and disempowerment are brushed over despite influencing ongoing engagement in healthcare (Cram et al., 2003; Harris et al., 2006; Wilson & Barton, 2012).

Responses to the 2014-2016 in-hospital patient experience survey showed that Māori were less likely to report positive experiences of care, to get answers they could comprehend, have their condition explained in a way they understood, and feel listened to and treated with respect (Health Quality and Safety Commission New Zealand, 2017). Similarly, in a case study, Māori reported frequently experiencing poor communication and lack of care information, with staff appearing intolerant of their cultural needs (Wilson & Barton, 2012). Additionally, participants reported considering whether they were treated differently because they were Māori, particularly after observing practitioners interacting with others. Despite concerns, participants hesitated to complain due to a sense of powerlessness (Wilson & Barton, 2012). Furthermore, Māori women have reported encountering problem-focused practitioners, adopting a biomedical view that compartmentalised their health, resulting in unmet needs (Wilson, 2008).

Proposed actions to improve Māori healthcare experiences include improved patient-practitioner relationships, culturally appropriate communication, and increased practitioner responsiveness to Māori (Palmer et al., 2019). Research across health disciplines has demonstrated that cultural safety enhances clinical care by highlighting assumptions and bias and addressing the notion of power (Curtis et al., 2019). While health practitioners have limited abilities to determine patient's access to DOH, it is within a practitioner's scope to ensure patients' rights to receive responsive, high-quality, and culturally safe healthcare are being met (Miner-Williams, 2017).

Previous reviews have investigated Māori experiences of health programs and services, highlighting the impact of poor experiences on further healthcare utilisation (Graham & Masters-Awatere, 2020; Mbuzi et al., 2017; Palmer et al., 2019; Pene et al., 2022).

While we can draw upon these, it is important to note that the EMS landscape is unique, and many findings may not be applicable in an EMS context.

3.6.1 Strengths and Limitations

The primary limitation is that research regarding EMS cardiovascular care for Māori in the EMS context is sparse in NZ. While some literature exists to quantify inequities in outcomes and access to CVD care in an EMS context, no evidence exists identifying Māori experiences of accessing EMS care for cardiac symptoms. Thus, it is currently impossible to draw conclusions regarding the experience of EMS cardiovascular care for Māori. Furthermore, this inquiry's systematic search methods and parameters may have excluded potential Indigenous material, including grey literature. It is important to note that systematic procedures are a creation of colonial practice and can exclude work conducted by Māori researchers that is not widely accessible due to academic publishing standards (Graham & Masters-Awatere, 2020).

3.7 Conclusion

CVD is a major health issue and contributes to health inequities in NZ. After primary prevention, acute CVD requires ‘first response’ by the health system so that people receive timely, effective CVD care. There are gaps in understanding this step for Māori, and this review of literature found evidence was lacking. Importantly, research that did report on inequities in outcomes and access to CVD care for Māori was generally completed with a Western lens and did not encompass all the CONSIDER domains. There is a pressing need for targeted research to better understand experiences of first response to cardiac symptoms from the perspectives of Māori.

Inequities in access to, and quality of, EMS cardiovascular care for Māori exist, and while literature quantifies these, gaps in understanding experiences for Māori in the EMS context are evident. Research in other health disciplines has highlighted that poor experiences can impact further healthcare utilisation for Māori. Understanding Māori experiences of EMS care can potentially ensure targeted improvements in the cultural appropriateness of EMS care for Māori.

3.7.1 Acknowledgements

This research has been undertaken as part of Manawataki Fatu Fatu, a research programme that is joint funded by the Heart Foundation and National Science Challenge Healthier Lives. SP is funded by Manawataki Fatu Fatu, and the Auckland University of Technology (AUT) Faculty of Health and Environmental Sciences (FHES) 2022 Staff Postgraduate Research Fellowship.

Chapter 4 Methodology

4.1 Introduction

In the previous two chapters, CVD was discussed, including the inequitable outcomes and disproportionate effects of CVD on Māori compared to European/other, as well as inequities regarding access to and quality of EMS cardiovascular care for Māori. Findings from a review of the literature suggested further research into the experiences of Māori when accessing pre-hospital ambulance care for cardiac symptoms is needed. The objective of this chapter is to describe the proposed methodological approaches for this thesis.

4.2 Methodologies

4.2.1 Introduction

There are many methodological approaches to research, all of which differ in ontological and epistemological stance; therefore, when completing research, the methodology and associated methods or tools must support the research aim in robust, appropriate, feasible, and culturally safe ways.

This research utilises a qualitative descriptive approach underpinned by Kaupapa Māori research (KMR) to answer the proposed research question and understand Māori experiences of pre-hospital care. KMR is critical to the research as it ensures the centring of Māori narratives to support Māori development. Furthermore, it provides a framework to critically analyse systems and the root causes of current inequities, including colonialism and racism.

4.2.2 Epistemology

Research must be supported by an appropriate research design to ensure it effectively addresses a notion or problem and answers the research question. Effort is needed to establish what methodologies and subsequent methods will be utilised, including how that choice is justified. Generally, justification lies within the purpose of the research and finding a capable process. However, justification is also reflected in the researcher's assumptions about reality and how that reality is understood. This includes beliefs about the nature of reality, the relationship between the researcher

and knowledge, and how the researcher discovers knowledge (Crotty, 1998; Guba, 1990). The perspectives in which the research is located must be understood, including the ontological and epistemological position of the research and researcher (Grant & Giddings, 2002).

The literature review in the previous chapter highlighted that research regarding cardiovascular care for Māori in the EMS context is sparse in NZ. Furthermore, while some literature exists to quantify inequities in outcomes and access to CVD care in an EMS context (Dicker et al., 2019a; Dicker et al., 2019b; Dicker et al., 2019c; Garofalo et al., 2012; Kerr et al., 2019), evidence regarding Māori experiences of accessing EMS care for cardiac symptoms is lacking. However, literature in other health disciplines outlined the importance of subjective experiences for Māori when accessing healthcare and how these can affect perceptions of care, further healthcare utilisation, and overall health outcomes. Based on these findings, experiences of cultural (un)safety for Māori and their whānau who have received acute pre-hospital care from paramedics was the focus of this research. This included exploration of the participants own experience of utilising the ambulance and the care they received; their views on the relationship that they had with the service and officers; concerns about access to, or quality of care by the ambulance service; and their views on what could be done to improve the ambulance service.

Based on the subjectiveness of experiences and perceptions, it was clear that the theoretical perspectives of quantitative research and positivism would not meet the aims of this research. This was due to its requirement for consistent objectivity and the need to differentiate scientifically established "truth" from subjective meanings. However, subjective meanings are crucial to people's lives, and examining "truth" this way makes people's everyday perceptions and experiences inferior or less 'truthful' to more scientific measurements (Crotty, 1998). This was particularly important as the review highlighted that Māori encountered health systems/practitioners that were problem-focused with Western biomedical views that compartmentalised their health and reported feelings of alienation and disempowerment that resulted in unmet needs that influenced the likelihood of engaging in ongoing care (Wilson, 2008; Wilson & Barton, 2012).It was critical to ensure this research did not perpetuate these feelings and instead allowed Māori to determine what was most important to them.

Additionally, quantitative research is restricted in understanding experiences as it is bound to what can be measured or tested. Based on this, qualitative methodologies were investigated to determine their suitability to address the research question and aims.

4.2.3 Qualitative Research

Qualitative research is a blanket term that describes any research inquiry that aims to explain or describe experiences, behaviours, or interactions within a social context without relying on statistical methods or numerical quantification (Fossey et al., 2002). Central to this is the idea that individuals socially construct meaning and, therefore, reality is not viewed as the fixed or measurable phenomenon that it is in a positivist paradigm. Instead, qualitative research allows for the multitude of realities that exist throughout time based on the context in which they occur (Merriam, 2002).

The purpose of qualitative research is to seek and understand the meaning of human actions and experiences and to interpret the viewpoints of those involved. Thus highlighting research participants' experiences as they understand them (Fossey et al., 2002). As a result, it is particularly valuable for understanding subjective experiences of health and disease, including the social and cultural factors surrounding these, including interactions between participants and healthcare services/systems (Fossey et al., 2002).

Qualitative research also aims to privilege the perspectives of research participants (Fossey et al., 2002). Given the socio-political position of Māori and the significant and unjust inequities that persist, giving privilege to Māori and their perspectives was deemed critical from the outset of this research. Additionally, due to its inductive approach whereby the researcher gathers data to build concepts or theories, qualitative research is participant-led, allowing for richness and ensuring participants can discuss issues critical to them. It effectively reaches traditionally marginalised or oppressed populations (Merriam, 2002). Utilising words over numbers to convey what the researcher has learned about a phenomenon also allows for depth and richness (Merriam, 2002). Finally, qualitative research is well-versed in developing knowledge around complex and poorly understood areas of health, where quantitative approaches are limited (Fossey et al., 2002).

Qualitative research is highly appropriate for this research based on the nature and aims coupled with the limited knowledge in this field. However, a suitable methodological approach was needed due to the variety of qualitative research strategies. It was essential that participants' subjective experiences could be accurately portrayed, given the social, political, and cultural context therefore qualitative descriptive research and KMR were chosen as the most appropriate methodological approaches for this research.

4.2.4 Qualitative descriptive research

Historically qualitative researchers have tended to favour approaches encouraging rigorous adherence to philosophical principles, likely due to the perceived obligation of researchers to seek credibility when producing research that departed from traditional scientific methods (Thorne et al., 2004). However, often, researchers find themselves with a question or topic that fits within the qualitative paradigm but does not align precisely with more traditional qualitative approaches (Bradshaw et al., 2017; Sandelowski, 2000). Rather than being constrained by or attempting to fit within the stringent theoretical and philosophical methodologies, more generic descriptive or interpretive approaches have emerged. As a result, qualitative descriptive is an approach that has gained popularity as a methodology within health and social sciences over recent years (Bradshaw et al., 2017; Thorne et al., 2004).

Qualitative descriptive research aims to discover and comprehend phenomena, processes, perspectives, or worldviews, particularly when information is required directly from those experiencing them (Bradshaw et al., 2017; Caelli et al., 2003; Merriam, 2002). It allows researchers to understand how participants make meaning of the studied concept, with the researcher being an instrument in mediating this meaning. It is inductive in its approach, and the outcomes are descriptive (Merriam, 2002).

Criticised as lacking guidance from the philosophic principles that underline more prominent qualitative methodologies, qualitative descriptive research is often classed as simple, superficial, or elementary (Caelli et al., 2003; Sandelowski, 2000). However, qualitative descriptive research remains critical in answering questions focused on the who, what, and where of experiences, primarily when these are poorly understood.

Given the lack of pre-hospital or paramedic-led research exploring experiences of care, this methodology allows for flexibility and depth that may not be possible with more stringent theoretical and philosophical methodologies (Latifnejad Roudsari, 2019).

During qualitative descriptive research the notion that what is offered in research is a subjective interpretation of one's reality, supported by verbatim participant quotes, is accepted. Furthermore, this is socially constructed by both research participants and the researcher, stressing the role and contribution of the researcher to the research. This requires acknowledgment that investigators cannot avoid affecting the phenomenon under investigation (Bradshaw et al., 2017), a position that will be discussed later in this chapter.

During qualitative descriptive research, there is a focus on in-depth understanding, first through literal description, and then through analysis and interpretation (Bradshaw et al., 2017). It allows for detailed insight into human experience by staying close to the surface of data yet still providing a detailed and interpretive result (Sandelowski, 2010). Experiences are described from the participants' viewpoint, focusing on producing detailed descriptions from those with the experience. While qualitative descriptive does not involve a high level of abstract reasoning, it allows researchers to learn from participants and their descriptions of experience to influence future interventions (Bradshaw et al., 2017).

Qualitative descriptive met many requirements for an appropriate methodology. However, some gaps were present. Despite qualitative descriptive's strengths, the researcher felt that to address the persistent and unjust inequities that occur for Māori and to avoid further perpetuating factors that have led to these, the incorporation of KMR was critical to this research.

4.2.5 Kaupapa Māori research

The signing of te Tiriti guaranteed the protection of Māori taonga, including health (Berghan et al., 2017). Furthermore, the United Nations Declaration on the Rights of Indigenous Peoples outlines that Māori, as the Indigenous people of NZ, have the right to equitable healthcare standards, quality, access, and outcomes, and the right to freely determine what health means and how it should be achieved (United Nations, 2007). This includes the right to create and control priorities and strategies that

acknowledge and exercise their right to health development (United Nations, 2007). However, traditionally research involving Māori within NZ has perpetuated imperialism by obtaining, analysing, and representing research through Western paradigms, promoting the idea that researchers can know everything about Māori from short encounters (Smith, 2012). Moreover, colonial research has disempowered Māori by implying that their position is their own fault, contributing to experiences of marginalisation, oppression, and cultural inferiority (Bishop, 1995; Mahuika, 2008).

Collection and analysis of Indigenous health data is necessary to understand and address health inequities. However, research involving indigenous participants must distinguish the ways in which systemic racism within research perpetuates systems that contribute to these inequities (Haitana et al., 2020; Huria et al., 2019; Reid et al., 2019). Therefore, the methods utilised in indigenous research must identify the impact of systemic racism on healthcare provision. This will ensure that the outcomes produced can address Indigenous health's complexities, making systemic change possible (Haitana et al., 2020; Huria et al., 2019). Consequently, research involving Māori should take an approach that is beneficial for Māori, under Māori control, and informed by mātauranga Māori while being supportive of decolonisation (Curtis, 2016a). Given these strengths, KMR was considered critical in informing this research's structure and process, particularly in accommodating Māori ways of being while remaining academically rigorous (Mahuika, 2008).

Applying Kaupapa Māori

Graham Hingangaroa Smith initially identified six principles of Kaupapa Māori within educational interventions and research (Smith, 1992). These have been applied throughout the research as outlined below:

1. Tino Rangatiratanga (self-determination): This principle refers to Māori right to self-determination, autonomy, and self-rule and reinforces the notion of Māori having meaningful control over their life and cultural well-being, including the ability to lead key decision-making processes. This enables decisions that reflect their cultural, political, economic, and social preferences. This research ensured tino rangatiratanga by utlising a by-Māori-for-Māori approach (Smith, 2012), whereby Māori leadership was supported at all levels, including by principal

researcher (SP), co-supervisor (MH), and Māori participants who were given the opportunity to review their transcripts to ensure that they had 'power' over their stories. This approach also allowed for analysis of structures and power relations (Pihama, 2010; Pihama et al., 2002; Smith, 2003), rather than focusing on personal or interpersonal perspectives, behaviours, and actions.

2. Taonga tuku iho (cultural aspirations): This principle emphasises Māori cultural aspirations, whereby Māori perspectives, ways of doing, knowing, and understanding are validated and legitimised. Incorporation of a Māori worldview occurred throughout this research, including the use of te reo Māori and respect for tīkanga (protocols) when meeting with participants and whānau. This meant the inclusion of karakia and kai during interviews as desired by participants. Additionally, a koha was provided following participation in interviews (Pihama et al., 2002; Smith, 2012).
3. Ako Māori (culturally preferred pedagogy): This principle refers to the ability of Māori to choose their preferred pedagogies unique to tikanga Māori (Pihama et al., 2002). Furthermore, research practices should connect effectively with the cultural backgrounds and social circumstances of Māori communities (Smith, 2003). Traditional 'scientific' research often neglects to scrutinise and report the historical events that have determined and influenced Indigenous People's lives and experiences (Wilson et al., 2022). Thus, throughout the research process, the researcher aimed to understand and address the socio-cultural and political underpinnings of the research setting, particularly those of colonisation and social justice. This ensured that the research was culturally relevant for Māori (Pihama et al., 2002). Consultation is addressed in more detail later in this chapter.
4. Kia piki ake i ngā raruraru o te kainga (mediation of socioeconomic factors): This principle addresses disadvantaged socioeconomic positions and negative pressures experienced by Māori whānau and communities. KMR should aim to meditate or alleviate these and create positive benefits for Māori (Pihama et al., 2002). Thus, this research was completed in a way that ensured no further socioeconomic pressures on participants, emphasising the improved well-being of whānau.

5. Whānau (the extended family): Whānau and the concept of whānaungatanga are essential components of Māori culture and identity. This principle emphasises cultural values, practices, and customs around the whānau, including collective responsibility (Pihama et al., 2002). This principle was recognised and respected during the research process through relationship building and whakawhānaungatanga to connect with Māori in partnerships to ensure that relationships were built on mutual trust. This genuine engagement with whānau ensured integrity within the research process (Curtis, 2016a; Jones et al., 2010). Furthermore, whānau was integrated throughout this research in many ways (Smith, 2015). Whānau participation in the research was encouraged in support roles or to describe their experience when a whānau member utilised the ambulance. This helped provide a range of perspectives, experiences, and invaluable insights regarding whānau and their importance during healthcare interactions.
6. Kaupapa (the collective vision): This principle emphasises the importance of meeting the collective vision and aspirations of Māori communities during research and connecting these to economic, cultural, social, and political well-being (Pihama et al., 2002). This principle was supported by genuine engagement and consultation throughout the research process, from recruitment through to data collection, analysis and interpretation and dissemination of findings. This helped to understand the needs and aspirations of participants (Curtis, 2016a; Jones et al., 2010).

Ultimately, KMR is a Māori centred approach and a theory that is about working by, with, and for Māori, underpinned by Māori philosophies and with Māori foundations to ensure tino rangatiratanga (Jones et al., 2010; Pihama, 2010; Pihama et al., 2002; Smith, 2012). It provides a platform for Māori to express their truth based on experiences and supports Māori self-development by providing a system to critique how society and colonialism have adversely affected Māori (Curtis, 2016a; Mahuika, 2008).

4.2.6 The researcher

For qualitative descriptive research, the researcher plays a vital role as an instrument in mediating how participants make meaning of the studied phenomenon. As both participants and the researcher construct knowledge of reality, it is essential to understand the researcher's positionality and how it might impact the research.

The author acknowledges that their personal and professional experiences have influenced the undertaking of this research, including the aims and questions chosen, the epistemological stance, subsequent methodology and methods, and findings to a degree. For example, as a paramedic and an educator, the author has experiences in clinical practice and knowledge of the paramedic education system, resulting in preconceived ideas. Data collection may also have been constrained if participants were influenced by factors such as the researcher's gender or age. Additionally, participants may have been guarded to share stories with a paramedic, given the small number of staff in the service and concerns about confidentiality. However, the author's clinical experience and knowledge also assisted with data collection during interviews, allowing for understanding when participants had gaps in their knowledge, meaning the researcher could appropriately and respectfully probe and ask more questions when clarity was required. Lastly, because the author is Māori and had a good prior understanding of social, cultural, and political factors influencing healthcare, they were better able to interact with participants and found that participants were willing to share their experiences.

4.2.7 Summary of Methodologies

This research aims to understand Māori experiences when utilising pre-hospital ambulance care. A qualitative descriptive approach, underpinned by KMR, was deemed the most appropriate methodology to achieve this, as qualitative descriptive research allows for discovering and comprehending a phenomenon, particularly when information is required directly from those experiencing the phenomenon and when these are poorly understood.

However, given the history of colonial research in NZ and the unjust inequities for Māori, KMR is critical to this research as it is a Māori centred approach that allows for the centring of Māori narratives to support Māori development. Additionally,

throughout this research, KMR provides the researcher with a framework to critically analyse systems and the root causes of current inequities, such as colonialism and racism.

4.3 Methods

4.3.1 Introduction

Having outlined the ontological and epistemological stance of the researcher and the subsequent theoretical framework of this thesis (Qualitative Descriptive and KMR), the remainder of this chapter describes the methods used for data collection and analysis during this research.

Consultation is described in the first section, followed by the sampling and recruitment methods. The justification and protocol for semi-structured interviews are then outlined, concluding with a description of a general inductive approach to data analysis.

4.3.2 Consultation

Consultation is an essential component of KMR, and therefore, this research as it promotes Māori control throughout by ensuring genuine engagement and consultation. This was done throughout the planning process, recruitment, collection and analysis of data, and interpretation of findings and helped to understand the needs and aspirations of participants, ensuring Māori whakamana (empowerment) (Curtis, 2016a; Jones et al., 2010).

The people consulted and outcomes from each consultation meetings is presented:

Hato Hone St John – consulted with clinical, researcher, and teaching staff at St John Ambulance service in addition to the Māori Responsiveness team. All supportive of the research. The main feedback was to publish the findings and seek ways to incorporate the results into cultural safety training as part of undergraduate and ongoing professional development at the organisation.

Māori clinicians and researchers – The main supervisor approached the team of the Manawataki: Fatu Fatu ACCESS group during the design of this research. The Māori co-

led rōpū agreed with the concept and provided input to the study design. As a result of these meetings, Associate Professor Harwood agreed to join the supervision team. Importantly, the rōpū has a Māori consumer group that continues to be liaised with throughout the analysis of data and dissemination of findings.

4.3.3 Data collection

Sampling and recruitment

Ethics approval was acquired from the Auckland University of Technology Ethics Committee (AUTEC) before commencing the study (see Appendix A).

The inclusion criteria included any person living in the Auckland or Northland region who was attended to by the Hato Hone St John Ambulance service between January 1, 2018, and December 30, 2023, for cardiac symptoms (chest pain, dyspnoea, tachycardia) or had whānau who were attended to by Hato Hone St John Ambulance service for cardiac symptoms, and who self-identified as Māori aged 30 years or older. People who could not give informed consent or participate in an interview were excluded from this study.

Potential participants were identified retrospectively from Hato Hone St John records, consultation with community groups, and personal contacts. The primary recruitment process involved sending a pānui (recruitment flyer) by mail to 100 potential participants who met the inclusion criteria across a chosen one-month period. This process occurred three times across the recruitment and data collection period. The pānui was also posted on the Manawataki Fatu Fatu social media platforms, and other community contacts and agencies also made initial contact with potential participants or posted the pānui on the researcher's behalf. Potential participants were then able to contact the researcher to express interest. Seven of the ten participants were recruited through accessing the pānui by mail or social media. Two participants were recruited as personal contacts of one of the researcher's supervisors (MH). Based on a low response rate during initial recruitment efforts, one year into this study, an amendment was made to AUTEC to allow for snowball recruiting; this allowed for possible participants to be identified from current participants. One participant was recruited this way.

This research utilised purposeful sampling by selecting participants according to the inclusion criteria; other factors were also considered to ensure access to information-rich cases and insights. This involved recruiting participants from various locations (rural and urban), gender diversity, and a range of ages. Other factors were also considered to ensure access to information-rich cases and insights. This involved recruiting participants from various locations (rural, urban) as well as gender diversity and a range of ages.

In addition to interviewing participants who received care from Hato Hone St John ambulance staff for cardiac symptoms themselves, whānau were also invited to participate in the study. This meant whānau could be interviewed with the participant or act as a support person during the interview. Alternatively, whānau were invited to participate if they had not had a personal experience but instead wanted to discuss a whānau member's experience, particularly if that whānau member was not able to or had died since receiving care as KMR emphasises cultural values, practices, and customs that are organised around the whānau. Furthermore, it has been increasingly recognised that whānau and individual well-being are inherently connected. Thus, when these participants discussed their experiences as a whānau member to someone receiving care, they could provide another perspective and often could elaborate and provide more detail. This added richness to data collection and analysis.

Semi-structed interviews

Potential participants could contact the researcher by telephone or email provided on the pānui. Upon contacting the researcher, further verbal information about the study was also given, and a time and location for the interview were arranged. Following this, a participant information sheet (PIS) was sent via email or post. Before starting the interview during the consent process, the researcher ascertained that the PIS had been received, read, and understood before commencing the interview.

In-depth semi-structured interviews were used for data collection and were conducted in person, at a location agreed to by the participant, or via Zoom or telephone. Three interviews were conducted in person; the remainder were completed via phone or Zoom. The researcher acknowledges that 'Kanohi ki te Kanohi' (face-to-face) is the preferred method for conducting interviews, particularly through a KMR lens, as it

helps gain trust and promote engagement. However, the research started late in 2021, and COVID-19 restrictions made it difficult, if not impossible, to travel, particularly as the aim was to capture participants from urban and rural areas with the researcher based in Auckland. In addition to COVID-19 restrictions, the method for interviews had to be feasible, and while less authentic, conducting interviews via Zoom still allows for a level of engagement to occur (Moyle, 2014). Some interviews were completed via telephone as participants could not access reliable internet. All participants were satisfied with the interview method, and customs such as karakia and mihi were still utilised.

The interviews ranged from 20 to 40 minutes and were informal and semi-structured. These were audio-recorded and then transcribed. Semi-structured interviews aim to be flexible and versatile, occurring in a conversational format whereby the researcher has a set of questions and a foundation of knowledge to help guide the exchange. During interviews, the researcher aimed to explore participant's experiences of utilising pre-hospital ambulance care for chest pain or cardiac symptoms as they described them. These included participants' view on care received and their relationship with the ambulance officer or service, what was important to them regarding their heart health, whether they have/or have had any concerns regarding access to or quality of care ambulance care provided, and finally, what improvements could be made. Open-ended questions and semi-structured interviews facilitated this as they provided more leeway to follow up on aspects deemed important by the participant. Additional prompts and probing questions were used to define and clarify concepts and extend the narrative if necessary (Brinkman, 2018).

Semi-structured interviews also create space for the legitimate exchange of views by permitting participants to voice what matters to them and their experience in their own words. This enables traditionally marginalised and silenced voices to be heard, fitting well with KMR regarding the sociocultural and political underpinnings and the emancipatory objective of KMR (Moyle, 2014). This also allowed the researcher flexibility to explore concepts and uncover new ideas that were not anticipated at the onset of the research. However, it required the researcher to be interactive and flexible. As a novice, the researcher practised interviewing techniques before conducting the first interview and subsequently transcribed the first interview, which a

supervisor checked to ensure the interviewer was probing without leading. The Interview Prompts and Schedule are attached in Appendix 2.

Data Analysis

A general inductive approach, as outlined by Thomas (2006), was utilised to analyse data. This approach provided a systematic procedure for analysing qualitative data to derive concepts and themes through reading and interpreting raw data without the restrictions imposed by more structured methods. This ensures findings emerge from the recurring, notable, or dominant themes present within the raw data rather than key themes being obscured, reframed, or missed because of the preconceptions that may be present during data analysis procedures imposed by deductive data analysis, like hypothesis testing (Thomas, 2006). The transcribing and coding of the ten interviews completed allowed for the categorisation of data into three themes.

Following transcription, participants were offered the opportunity to view their transcript to check that the way it had been transcribed correctly reflected how they intended their statements to be interpreted. This allowed for clarification, correction, and further comments to be made. Participants were also informed of their right to remove any material they did not want to be included, and further permission was sought to use the transcripts at this point. Some participants declined this opportunity, while four reviewed their scripts, interview scripts were relatively unchanged. The researcher then read each transcript and listened to audio recordings; this allowed the researcher to associate factors such as tone with the written transcription and be familiar with each interview.

The initial coding of all interviews was then managed through NVivo 12. This process began with preparing the raw data files and close reading of the text. This meant each interview transcript was read in detail to allow for familiarity with the contents and understanding of the details of the text. The interview transcripts were then uploaded to NVivo 12, and specific text segments were identified through readings and labelled to create initial codes. Following this initial raw coding, all labels were read through, and many codes were merged based on the similarity of meanings. This led to the formation of five categories. These codes were then plotted onto a Miro Mind map whereby codes were structured according to hierarchy, allowing for categories to be

revised, and for sub-themes and sub-sub-themes to be created. Appropriate quotes were selected that conveyed the core theme. Finally, categories were further combined when the meanings were similar, and prioritisation was given to categories that met and were relevant to the research objectives (Thomas, 2006).

Results were then reported into three main themes; when reporting these, critical information about each theme, including labelling of the theme, a description of the meaning of the theme from the author, and finally, a quotation(s) from the raw text to elaborate the meaning of the theme and to show the type of text coded into the theme (Thomas, 2006).

4.4 Summary

This chapter has discussed the theoretical stance and arguments for utilising qualitative descriptive and KMR methodologies to support the research aims in robust, appropriate, feasible, and culturally safe ways.

This research utilised purposeful and homogenous sampling techniques to ensure access to information-rich cases and insights. Semi-structured in-depth interviews with Whānau present as support or as participants occurred. These occurred either face-to-face or via Zoom or telephone to explore participants' experience of utlising pre-hospital ambulance care for cardiac symptoms in detail. Open-ended questions and prompts were used, and interviews were transcribed and returned to participants for review. A general inductive approach to analyse data was used, allowing for the formation of three themes.

The next chapter will present the qualitative manuscript including the results of the interviews.

Chapter 5 Results (Manuscript 2)

5.1 Introduction

This chapter is made up a of manuscript ready for publication and presents the findings of this research. It begins with a summary of the background, aims and methods for the research and then provides a detailed overview of all results. The chapter then finishes with a discussion that links and compares findings from this study to previous literature. It has been composed for submission to the Journal of Primary Health Care and is presented largely as it will be submitted, except for minor edits and formatting changes to maintain consistency throughout the thesis.

Cultural Safety in Paramedic Practice: Experiences of Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics.

5.2 Abstract

Background:

Cardiovascular disease (CVD) is a major health issue for Māori that requires timely and effective first-response care. Māori report culturally unsafe experiences in healthcare, resulting in poor health outcomes. Research in the pre-hospital context is lacking. This study aimed to explore Māori experiences of culturally safe pre-hospital cardiovascular care.

Methods:

Utilising a qualitative descriptive methodology underpinned by Kaupapa Māori Research (KMR), in-depth semi-structured interviews were undertaken with ten Māori and/or whānau, and a general inductive approach was used for analysis.

Results:

Three key themes were identified: (1) interpersonal workforce skills, (2) access and service factors (3) active protection of Māori. Participants described paramedics' clinical knowledge and interpersonal skills, including appropriate communication and

ability to connect. Barriers to accessing ambulance services included limited personal and community resources and workforce issues. The impact of heart health on communities and desire for better preventative care highlighted the role of ambulance services in heart health.

Conclusion:
Māori experience culturally unsafe pre-hospital care. Although there were few reports of interpersonal discrimination, systemic and structural barriers were harmful. Efforts to address workforce representation, resource disparities, and cultural safety education (focussing on communication, partnership, and connection) are warranted to improve experiences and outcomes for Māori.

Keywords: experience, pre-hospital, emergency medical services, Māori health, indigenous health, health disparity, kaupapa Māori, qualitative research

What this gap fills:

What we already know:
Culturally unsafe care impacts health outcomes and further healthcare utilisation for Māori. Inequities exist in access to and quality of pre-hospital cardiovascular care for Māori. The reasons for such inequities in pre-hospital care are not well understood.

What this study adds:
This study provides an insight into pre-hospital care from the perspectives of Māori and whānau who utilised the ambulance service for chest pain or cardiac symptoms. A culturally appropriate research approach, based on KMR principles, identified interpersonal interactions between Māori and paramedics and systemic and structural barriers as key drivers of poor experiences while highlighting areas where improvements could occur.

5.3 Introduction

Cardiovascular disease is the primary cause of death and a significant cause of morbidity in NZ (Ministry of Health, 2016a). The burden is disproportionately greater for Māori, who experience a higher prevalence of CVD and at younger ages compared with non-Māori (Chan et al., 2008).

The reasons for CVD inequities are complex. Research has demonstrated negative experiences for Māori compared to non-Māori within the healthcare system, including poor communication, differential treatment, and intolerance towards cultural needs, resulting in unmet healthcare needs (Health Quality and Safety Commission New Zealand, 2017; Wilson, 2008; Wilson & Barton, 2012). The relationship between Māori and health practitioners influences ongoing engagement in healthcare and outcomes for Māori (Graham & Masters-Awatere, 2020; Mbuzi et al., 2017; Palmer et al., 2019; Pene et al., 2022).

Cultural safety enhances clinical care (Curtis et al., 2019), and it is within the scope of health services to ensure that patients receive accessible, timely, and high-quality culturally safe care (Miner-Williams, 2017).

Information about pre-hospital cardiovascular care for Māori highlights significant inequities regarding access to and quality of pre-hospital cardiovascular care for Māori (Dicker et al., 2019a; Dicker et al., 2019b; Dicker et al., 2019c; Garofalo et al., 2012; Kerr et al., 2019). This research addresses a knowledge gap, aiming to explore Māori experiences of (un)culturally safe pre-hospital cardiovascular care.

5.4 Methods

5.4.1 Kaupapa Māori Research

KMR informed the research's structure and ensured it was informed by mātauranga Māori and under Māori control from the outset to, incorporating Māori ways of being while remaining academically rigorous (Curtis, 2016a; Mahuika, 2008; Smith, 2012).

5.4.2 Eligibility criteria

Inclusion criteria were: Māori aged 30 years or older, living in Tāmaki Makaurau and Te Tai Tokerau and attended to by Hato Hone St John Ambulance service between January 1, 2018, and December 30, 2023, for cardiac symptoms (chest pain, dyspnoea, tachycardia).

Whānau were also invited to participate in the study and could be interviewed with the participant or act as a support person. Alternatively, whānau could participate if they had not had a personal experience but instead wanted to discuss a Māori whānau

member's experience, particularly if that whānau member was unable to or had since died.

5.4.3 Recruitment

A range of methods for recruitment were used including participants being identified retrospectively from Hato Hone St John records, consultation with community groups, social media, personal contacts, and snowballing techniques.

5.4.4 Ethics

Ethics approval was acquired from the Auckland University of Technology Ethics Committee (AUTEC) (21/388) before commencing the study.

5.4.5 Interviews

Semi-structured interviews were undertaken with ten Māori and/or whānau utilising open-ended questions ensuring participants could voice their experience in their own words, enabling traditionally marginalised voices to be heard (Moyle, 2014). Whakawhānaungatanga (relationship building) was an essential part of this process. While 'Kanohi ki te Kanohi' (face-to-face) is the preferred method for conducting interviews through a KMR lens (Moyle, 2014), COVID-19 restrictions made it difficult to travel, thus these were conducted either in person, at a location agreed to by the participant, or via Zoom or telephone, starting and ending with karakia as participants desired.

5.4.6 Data analysis

Interviews were audio recorded and transcribed. When requested, transcripts were returned to participants to check for accuracy. A general inductive approach provided a systematic procedure for analysis (Thomas, 2006).

The main researcher analysed transcripts by reviewing audio recordings, associating factors like tone with written transcriptions. NVivo 12 was used to manage initial raw coding, similar codes were merged into five categories. Categories were revised, core quotes selected, and similar categories combined, prioritising those aligned with research objectives (Thomas, 2006).

5.5 Results

Of the ten participants, three were urban-dwelling and seven lived rurally. Five participants identified as female and five as male.

Three distinct themes and nine sub-themes regarding experiences of cultural safety in pre-hospital cardiovascular care were identified, summarised in Table 5-1.

Table 5-1. Themes and sub-themes identified during the interviews with selected participant quotes

INTERPERSONAL FACTORS	
SKILLS AND KNOWLEDGE • PROFESSIONAL, KNOWLEDGEABLE, AND SKILLED • CARING AND EMPATHETIC	*"The type of profession that the officers have requires empathy. Empathy in treatment, and connection, and genuine wanting to be of service … I don't think you can teach that. I think you have it, or you don't."*
COMMUNICATION • LISTENED TO AND HEARD • IMPORTANCE OF COMMUNICATION WITH WHĀNAU • COMMUNICATING CLINICAL INFORMATION	*"So, they were doing their stuff, getting what they needed from my body and my heart especially, but also communicating with me the whole time and it wasn't just them talking at me, they let me talk too."*
CONNECTION AND TRUST • CONNECTION IMPORTANT, FOSTERED THROUGH CONTEXT, RELATABILITY, AND STORYTELLING • INITIAL APPROACH AS A BARRIER TO CONNECTION AND RAPPORT • WHAKAMĀ AND FOSTERING TRUST	*"These two [local officers] didn't even flinch about coming into our whare [home] on this street which probably looks a bit rough … Cos they come from here, they know our context".* *"Yeah it was a bit messy at the start and that wasn't the best way to meet each other but once we got over that and I put that down to them listening to me and probably like seeing that I was okay after they did the tests and things and spoke to the office, so if they carried on like the way they first started I probably wouldn't have liked it"*
PARTNERSHIP AND AUTONOMY • INVOLVEMENT IN DECISION-MAKING • MANA ENHANCING	*"The only way to enhance your own mana is to enhance the mana of others … I think that would be a beautiful way to koha something and begin a compounding process of really allowing people to stack on that, for themselves."*
ACCESS AND SERVICE FACTORS	
CALLING AN AMBULANCE • RECOGNISING 'NON-SPECIFIC' SYMPTOMS • HEALTH LITERACY • DELAYED DECISION TO CALL OR CALLING WHAKARONGORAU/GP FIRST	*"Something that I thought would be a good learning for whānau, to be aware of these sorts of indicators. Rather than me thinking, 'sore throat, oh nah, you'll be okay', but it's definitely a sign [of a heart attack] which I never knew about."*

BARRIERS AND RESOURCE ISSUES • LONG RESPONSE TIMES AND LACK OF RESOURCES WITHIN COMMUNITIES, PARTICULARLY RURAL • COST • OTHER CHALLENGES WITH LIVING RURAL	*"Now there's a disconnect there, as far as I'm concerned and the community in this area has grown substantially and the resources haven't followed suit, or maybe they have and things are gonna change, but there's no evidence of that."* *"Ever since I was a kid, I prayed to God to keep me healthy for as long as he could because I knew we was poor and couldn't afford to go to the hospital or doctor. And I heard that you have to pay for the ambulance too, so you know I don't really like having big things like ambulance rides".*
WORKFORCE REPRESENTATION • LACK OF MĀORI REPRESENTATION • LOCAL CONNECTION AND KNOWLEDGE NECESSARY	*"I wish we had more Māori who do that training, I've never met a Māori ambulance person. Do they even exist?"*
ACTIVE PROTECTION OF MĀORI	
HEART HEALTH FOR MĀORI • TRUST IN THE SYSTEM, A SYSTEM NOT MADE FOR MĀORI • LIVING WITH HEART DISEASE, IMPACT ON INDIVIDUAL, WHĀNAU AND COMMUNITY • NEED FOR BETTER PREVENTATIVE CARE FOR MĀORI	*"I mean you hear all these stories about people ringing the ambulance and waiting for hours or not even turning up at all for whatever reason, or if they do come just give up on you and leave you at home and I've heard of people who died at home when that happened to them which is bloody disgusting."* *"It just affects so much other than the families. To me, up here, in the north we need to be looking after our health because we don't have the access like in the cities, like that, if something happens."*

THE AMBULANCE SERVICE AND MĀORI HEART HEALTH • **AMBULANCE SERVICE AS A LIFELINE AND ESSENTIAL** • **VIEW OF THE AMBULANCE SERVICE AS AN EMERGENCY SERVICE** • **THE AMBULANCE AND A ROLE IN PREVENTION** • **CO-DESIGN**	*"When you get into an ambulance it's sterile. It's like being in a laboratory … a little Māori mural on the inside of the back doors – you know when you're lying there would help you identify your culture with being in a sterile situation."* *"I think wānanga [group learning] is important, and it doesn't have to be ten hours on a marae it can be 20 minutes in an ambulance on the way to the hospital. Sometimes sharing and knowing, and in rapport with somebody you can do a lot in that time to hold space for them to really stand for themselves."*

5.5.1 Interpersonal factors

Skills and knowledge

Participants acknowledged an appreciation for and expectations of staff knowledge, professionalism, and empathy. However, experiences were mixed, particularly for participants who lived in rural communities that did not have an ambulance response permanently staffed at the time of their experience and likely relied on volunteers/first responders.

> *"It was certainly professional … they didn't have, I thought, the scale or care level that I otherwise thought the ambulance service would provide…it was adequate."*

Communication

Communication was discussed and went beyond 'being informed' to feeling included, listened to, and heard and extended to whānau.

Although mostly positive, one participant emphasised the need for clear communication, especially when seeking consent.

> *"They said, "It could cause bleeding." In my mind as a non-clinical person, 'oh, bleeding, okay, they can stop that'. My mind automatically went to bleeding like women bleed, period bleed. It didn't think like brain bleed … probably explain that a little bit more, say it's a high chance and not just a chance."*

Connection and trust

Participants sought interpersonal connections with officers. However, these were not always prioritised by paramedics.

Connections were strengthened through familiarity, relatability, and storytelling, particularly when officers disclosed information about themselves that humanised them.

> *"I enjoy people's stories, and to hear a couple of them [staff] exchange stories, I was like, 'wow, that's what it looks like in your world'."*

Connections were deepened when the officers were local making participants feel less judged. Additionally, local connection meant staff had valuable knowledge about geography and tikanga for Māori specific to that region.

> *"I'll tell you, if they hadn't been locals, I dread how they would have found us."*

> *"If we were looking at specific rohe or takiwā, that having knowledge about it [Mātauranga Māori] locally would be a nice space to hold for Māori."*

Equally, connecting through whakapapa was important.

> *"Rather than saying my name is XXX, I feel more comfortable saying I'm XXX and I'm Ngāi Tahu from XXX."*

However, officers prioritised clinical interactions and skills over forming connections to the detriment of interactions.

Sensitivity to participants being Māori, especially for wāhine [women] and kaumātua [elders], was important due to feelings of whakamā [embarrassment] around exposing body parts. When officers displayed sensitivity, it fostered trust.

> *"They [officers] fostered trust. That's the only way I can think of putting it … that's a big thing for Māori – especially when the man wasn't Māori and was Pākehā [non-Māori]."*

Partnership and autonomy

Partnership and autonomy in decision making contributed to mana enhancement in and beyond the experience.

> *"The autonomy given to me, like everything was always my choice."*

5.5.2 Access and Service Factors

Calling an ambulance

The type and nature of symptoms influenced decisions to call an ambulance, particularly 'non-specific' pain in the neck, throat, or arm.

Participants also tried more accessible options first, such as Whakarongorau or their GP services.

Barriers and resource issues

Concerningly long response times occurred in rural and urban locations but were more impactful for rural participants. It is worth noting that stations in some rural communities are not staffed 24/7.

> *"There must be a lot of people that fall down the cracks waiting for the ambulance to arrive."*

Some expressed frustration that their communities were not being adequately served. One participant also described a situation whereby an ambulance was called for a whānau member, and they were advised to arrange self-transport, resulting in feeling dismissed.

> *"The last times has been hurtful that she's not being heard and cared for especially while she's worried about her health".*

These experiences impacted on participants' future decisions to phone an ambulance, self-transport and/or not seek help.

> *"The location that we're in, what I would probably do is get my wife to drive me and meet the ambulance halfway or drive me right to the station."*

Māori and rural communities also lacked appropriate resources. One participant required a bariatric ambulance (an accessible ambulance capable of transporting

patients who are considered overweight for a regular ambulance stretcher) to be transported, however, despite having a medical alarm and being a frequent user of the ambulance, was consistently sent a standard ambulance. This resulted in delayed care as the officers assessed them in a standard ambulance before having a bariatric ambulance dispatched.

Cost is a significant issue for ambulance callouts, preventing or delaying some participants from calling 111. Some were unaware of costs until receiving a bill. During interviews, there was some discussion about reducing ambulance costs through health insurance or ambulance memberships, with annual payments to receive free ambulance services when needed. Not all participants were aware of membership options until after their incident, but there was general interest in joining. Participants who received the $98 bill said that the charitable nature of Hato Hone St John meant they were happy to pay.

Living in a rural location was a barrier to accessing healthcare, including a lack of primary care options, reduced access to specialists, and greater distance from hospitals. These factors may increase reliance on the ambulance service in rural regions.

Rurality also creates logistical challenges with transporting patients. Depending on the severity of the condition and the location, transport via helicopter may be required. This was upsetting for one participant who sent their Mum to hospital in a helicopter without any whānau support due to constraints within the helicopter.

> *"If it's serious then it means travelling away, organising your home and whānau to get down there, and of course we don't like that, mum going off without somebody there with her."*

Workforce representation

A workforce representing participants as Māori and with local knowledge and connections was desired, noting a lack of Māori representation in the ambulance service.

Reasons included increased comfort and connection when being treated by other Māori, a longing to have Māori look after their own, and to have Māori paramedics

visible as positive role models. It was also noted that having a nationally representative workforce (at 16%) is not enough within areas with increased Māori population.

> *"Especially in areas like this where there are heaps of Māori patients, we'd all love to see more Māori staff being successful and looking after our own. And even better it'd be good to get kids thinking about training to do something good like ambulance work. Cos there are heaps of kids at college and that who probably haven't even thought about something like that, I know I didn't."*

5.5.3 Active Protection of Māori

Heart health for Māori

Participants described their perceptions of, and challenges within, the health system, influencing their views of the ambulance before they had arrived, particularly regarding how Māori had been treated.

> *"I probably worried about that when they first arrived, you know. Had some beef with the ambulance from the stories I'd heard about how they treated some of our people."*

Additionally, trust in the health system also influenced views of the ambulance service.

> *"So, I think my own feelings, and trust in the health system, made me feel wary of them when they arrived. But we both got over that and I can only thank them now."*

One participant who identified as being Māori and Pākehā described the opportunities that were available to her based on her Pākehā side and the realisation that not all Māori have these opportunities.

> *"I wonder sometimes if my experiences would be different had I not been with my mum who's white, or who looks white, and my grandparents who both look white and have a different image placed on top of them … I haven't had to really fight for somebody to listen or hear me."*

Furthermore, they described questioning these differences and how they impacted the life span of their Pākehā grandparents compared to their Māori grandparents.

> *"Sometimes when I look at health I think, 'gosh, did my Pākehā grandparents live longer because of their Pākehā genetics [or how*

> *society privileged them], and how has that contributed to my health and my trajectory?'"*

These conversations gave the impression of being aware of the nature of the health system and how it inherently disadvantages Māori.

Participants described the impact of living with heart disease which extended beyond the individual and included whānau and communities, and participants described being aware of their risks and how being sick might impact their whānau.

> *"My second child, was born 6 months before I had the heart scare so on the day it happened, I was worried because I knew I had these risks, and I was worried about being there for my kids."*

Whānau often witness other whānau members suffer from a drawn out and debilitating disease that limited life span and affected communities, raising questions regarding the structure and funding of the health system and its focus on curing instead of prevention.

> *"Sometimes I wonder if we're putting our money in the right space? Not that I don't support the kaupapa, but sometimes I wonder if instead of being the ambulance at the bottom of the hill, we go up the top and stop the people from jumping."*

It was acknowledged that in order prevent heart disease for Māori the approach needs to be specific to Māori.

> *"Prioritise what's required earlier in the process for Māori, especially Māori men when they start to show signs, whatever it is, if it's medical or doing those operations, and giving them information that will endeavour anyway to help them and make life better."*

The ambulance service and Māori health

Participants described the ambulance service as being essential. Although they expressed gratitude, there was a sense that patients' lives were in the hands of the paramedics.

> *"I was prepared to do whatever they wanted me to do, to get me to hospital."*

Participants also described the quickness and urgency of the 'emergency response' by officers and feeling that this was sometimes over-the-top.

> *"Next minute there's a bang at the door and my son opens it and in barge in these ambulance people with their big bag and oxygen and looking all concerned, shouting at us about 'who is it that has chest pain here'."*

Although not overtly stated, there was a sense that the ambulance was there merely to provide transport.

> *"They came here and [we] went to the hospital. There was not a great deal in between, with cardiac it's quite simple."*

Despite the overwhelming desire for better preventative heart health only one participant described the ambulance service as playing a role in this.

Participants described specific improvements that could be made by the ambulance service particularly around responsiveness to Māori, including ideas on indigenising the space and people in it.

> *"It might be nice to be able to weave that [Maramataka and te Whare Tapa Wha] into conversation, gently. I guess that would also contribute to mana enhancement."*

While the use of te reo Māori, including pronunciation, was desired by some participants, it was acknowledged as being complex.

> *"The opportunity to actually speak [te reo Māori]. Even if I know a few words then I can answer them in a few words."*

> *"It's I guess never for me about how much te reo do you know. I think it can be a little bit complicated because people get upset. Some love it if you pronounce the kupu beautifully, and then others get upset if you don't."*

Ultimately partnership between Māori and non-Māori is pivotal in honouring te Tiriti o Waitangi and improving outcomes for Māori.

> *"It's really about instead of just having this constant conversation of two parties, how do you transform the middle section … that enables non-Māori to show up to this space, with Māori, and be good Treaty partners?"*

5.6 Discussion

This qualitative study explored the experiences of cultural (un)safety for Māori and their whānau who received acute pre-hospital cardiovascular care from paramedics. It was underpinned by KMR, centring Māori narratives and providing a framework to critically analyse systems and the root causes of inequities, including colonialism and racism (Curtis, 2016a; Pihama, 2010; Pihama et al., 2002). Semi-structured interviews identified three themes: interpersonal factors, access and service factors, and active protection of Māori.

Inequities in health are caused by poor experiences when accessing healthcare due to unequal partnerships, ineffective communication, and lack of empowerment, respect, and trust rather than a lack of cultural knowledge (Reid & Robson, 2007). These concepts are critical to delivering appropriate, equitable, and culturally safe care (Curtis et al., 2019). Cultural safety extends beyond acquiring cultural knowledge and the development of appropriate attitudes and skills, instead focussing on understanding and addressing bias and stereotypes, as well as acknowledging and preventing barriers to clinical effectiveness that arise from any power imbalance between patients and practitioners at both individual and organisational/systemic levels (Curtis et al., 2019).

The theme of interpersonal skills recognised the importance of communication, connection and, whakawhānaungatanga. When participants experienced good communication in their clinical care, they felt informed, included, listened to, and heard. One participant's experience highlighted the importance of communicating in language that can be understood by Māori and whānau. The whānau appeared unaware of the severity of the potential adverse effects of a treatment due to insufficient information provided by paramedics. Māori face challenges in accessing information about healthcare (Arlidge et al., 2009; Health Quality and Safety Commission New Zealand, 2017; Kerr et al., 2010; Wilson & Barton, 2012) due to issues such as complex language (Health Quality and Safety Commission New Zealand, 2017; Kerr et al., 2010). There was a sense here of ‘what if? Had we known the risks for a brain bleed, would we have chosen the treatment?’. Communication is key to empowerment and autonomy (Leitch et al., 2021; Pene et al., 2022). As participants

suggested, both positive and negative communication experiences will have long-term impacts regarding (not) trusting health providers and (not) seeking timely healthcare (Anderson et al., 2017; Cram et al., 2003; Levack et al., 2016; Newport et al., 2023; Walker et al., 2023; Wilson & Barton, 2012). Critically**,** trust is also based on the experiences of whānau and others within communities (Espiner et al., 2021).

Whakawhānaungatanga builds trust and influences positive experiences of care for Māori (Anderson et al., 2017; Cram et al., 2003), but was not always prioritised. Paramedics are trained to quickly and effectively identify life-threatening problems in critically ill or injured patients and treat them (Thim et al., 2012). However, several participants felt this approach undermined key relationship-building (Walker et al., 2023). Medical students in NZ currently receive training in whakawhānaungatanga, learning the Hui Process to enhance the doctor-patient relationship with Māori (Lacey et al., 2011). However, the pre-hospital environment is complex, and relationship-building with patients, using frameworks such as the Hui Process, particularly in time-critical situations, can present many challenges. Additionally, a lack of pre-existing relationships, (Cram et al., 2003; Reid et al., 2016), coupled with short interactions, particularly in urban and urgent settings, can prevent connections between paramedics and Māori. Further, participants sought 'their own' yet Māori are significantly underrepresented within the pre-hospital (Morrison & Tunnage, 2014), as well as the wider health workforce (Curtis & Reid, 2013; Reid & Robson, 2007; Walker et al., 2023), undermining efforts to realise the benefits of ethnic concordance between practitioner and patient (Cooper & Powe, 2004; LaVeist et al., 2003). Despite the common misconception that the process of whakawhanaungatanga is simply about rapport, Māori establish relationships through talking about whakapapa first and foremost (Levack et al., 2016). While non-Māori may believe they are establishing rapport, rapport is interpreted differently by different cultural groups (Cram et al., 2003). Thus, a focus on increasing the Māori pre-hospital workforce is necessary.

The theme of access and barriers illustrated issues relating to health literacy, structural barriers, ambulance resourcing, and workforce demographics. Discussion about 'when to call an ambulance' included the role of 'non-specific' symptoms emphasising the need for accessible culturally appropriate information for Māori and whānau regarding the range of cardiac symptoms and when to seek medical assistance. However,

improved health literacy does not guarantee timely access as significant structural barriers, including cost and availability of services, impact Māori and whānau's ability to access care (Graham & Masters-Awatere, 2020). Rural areas within NZ have poorer access to primary healthcare (Ministry of Health, 2023) and advanced-level hospitals, longer emergency service response times, and reduced personnel (Lilley et al., 2019). Māori are more likely than non-Māori to live in rural and remote areas and to be socioeconomically deprived (Lilley et al., 2019; Ministry of Health, 2023), thus resulting in poorer access to pre-hospital care, increasing overall morbidity and mortality for Māori (Crengle et al., 2022).The importance of improving communication and resources around cardiac symptoms and when to phone 111 is key. Pre-hospital services must also be optimally organised to address geographical and socio-demographic factors to ensure timely and equitable access to care.

Active protection for Māori was demonstrated as participants questioned the scope of ambulance services providing care to Māori, including preventative care (Heart Foundation, 2022). The nature of the ambulance service has changed due to an increasing population, overrun emergency departments, and decreased access to primary care services, particularly rurally (Swain et al., 2010), with low acuity (status 3 or 4) patients making up approximately 85% of patients attended to by the ambulance in NZ (Todd et al., 2021). Consequently, more patients are treated and left at home or referred to other health and social services (Swain et al., 2010). As highlighted by one participant, further shifts to provide education about heart health and disease prevention, such as in the back of an ambulance during a trip to the hospital, could also be considered.

A major strength of this study was the use of a Māori methodological approach was beneficial for Māori, under Māori control, and informed by mātauranga Māori to give the study rigour. While findings of this research provide an insight into pre-hospital care from the perspectives of Māori, it is not entirely representative or comprehensive - it was limited to those who did phone an ambulance and (unintentionally) excluded Māori who avoid accessing pre-hospital care due to distrust in the ambulance service. Additionally, those who had very poor pre-hospital experiences may have felt disenfranchised and unwilling to participate (Ellard-Gray et al., 2015). Further research

exploring perceptions of the ambulance within communities and whānau that have less engagement with pre-hospital services is recommended.

5.7 Conclusion

Māori experience culturally unsafe pre-hospital care. Although there were few reports of interpersonal discrimination, systemic and structural barriers were harmful. Efforts to address workforce representation, resource disparities, and cultural safety education (focussing on communication, partnership, and connection) is warranted to improve experiences and outcomes for Māori.

Chapter 6 Discussion

6.1 Introduction

This chapter provides an overall summary of the research, beginning with the research aim and approach. The main findings of this research will then be summarised and situated in regard to the research aim and the research procces critiqued, including the strengths and limitations of the research approach. Finally, this chapter will conclude with the implications and recommendations for future practice.

6.2 Summary of Thesis

6.2.1 Background and aim

Cardiovascular diseases are a group of disorders of the heart and blood vessels. They are common and result in poor survival and, therefore, remain a crucial cause of premature morbidity and mortality and increasing healthcare costs (McAloon et al., 2016; Roth et al., 2020). An increase in prevention and access to treatment over the past twenty years within NZ has substantially reduced the overall incidence and mortality of CVD. However, CVD remains the primary cause of death and a significant cause of poor health, with Māori experiencing a an increased CVD burden compared to non-Māori (Grey et al., 2018b; Miner-Williams, 2017; Ministry of Health, 2015, 2016b; Selak et al., 2020).

The contributing factors that underly ethnic CVD inequities are multifaceted and complex (Walsh & Grey, 2019), but in general, can be grouped into three categories, including differential access to DOH or exposures, leading to differences in disease incidence; differential access to healthcare services; and differences in quality of care received (Jones, 2001). Understanding differences in access to and quality of cardiovascular care for Māori remains crucial in addressing inequities in CVD outcomes for Māori.

It is widely recognised that a focus on prevention and treatment, involving primary and acute level care, is required to reduce the burden of CVD. Furthermore, a critical step between primary care and secondary intervention is the pre-hospital diagnosis and treatment of acute CVD events. The ambulance service and its staff play a key role in

ensuring equity in access to and quality of healthcare as prompt treatment for ACS events is essential as it decreases the likelihood of death and increases the potential benefit of treatment (Ibanez et al., 2018; Johnston et al., 2006; Kerr et al., 2019; McNamara et al., 2006). Yet internationally delays in accessing EMS for CVD are common (Garofalo et al., 2012; Jabir et al., 2021; Kerr et al., 2019; Nilsson et al., 2016; Tubaro et al., 2011). Within NZ these delays are more profound for Māori, who are more likely to self-transport to hospital or delay phoning 111 (Garofalo et al., 2012; Liao et al., 2022). Despite this, there is little information regarding experiences of pre-hospital cardiovascular care from the perspective of patients. More specifically, within the NZ context, there is no research highlighting experiences of Māori. Therefore, significant gaps exist in understanding the relationships between access to, outcomes, and experiences of pre-hospital cardiovascular care for Māori.

The aim of this thesis was to answer the research question:

What are the experiences of cultural (un)safety for Māori who received acute pre-hospital care for chest pain or cardiac symptoms from paramedics and/or the experiences of whānau?

6.2.2 Research approach

This thesis aim was achieved through exploring a narrative literature review as presented in Chapter 3, selecting, and utilising qualitative methods as described in Chapter 4 and conducting semi-structured interviews as described in Chapter 5.

Chapter 3 explored a narrative literature review that synthesised evidence on access to, and quality of, emergency medical services (EMS) cardiovascular care for Māori by (i) determining if inequities exist in cardiovascular disease (CVD) outcomes and access to CVD care in an EMS context in NZ and (ii) identifying Māori experiences of accessing EMS care for cardiac symptoms. A narrative approach, that applied the principles of PRISMA to the screening and search strategy, was used. This method was chosen to provide a scholarly summary of current research that was interpretive and critical, particularly in a poorly understood area of research, but also informed and systematic in its approach (Greenhalgh et al., 2018).

Chapter 4 describes the research methodology utilised. This research utilised a qualitative descriptive approach underpinned by KMR. This was chosen due to the subjectiveness of experiences and to avoid perpetuating feelings of alienation and disempowerment that are common for Māori throughout colonial research (Bishop, 1995; Mahuika, 2008; Smith, 2012) and the healthcare system (Cram et al., 2003; Newport et al., 2023; Walker et al., 2023; Wilson & Barton, 2012). The KMR principles outlined by Smith (1992) were applied throughout to ensure the research was beneficial for Māori, under Māori control, and informed by mātauranga Māori. This also ensured Māori involvement in key decision-making. Te reo Māori was incorporated, and tīkanga, including karakia and provision of koha adhered to. Connecting with Māori communities was prioritised by understanding the socio-cultural and political contexts to improve whānau well-being without imposing additional socioeconomic pressures. Genuine engagement and consultation, whakawhānaungatanga, and whānau participation allowed for diverse perspectives and ensured the research reflected the collective vision and aspirations of Māori communities. These principles shaped decisions regarding semi-structured interviews as a data collection tool allowing Māori and whānau the ability to discuss their experiences of utilising pre-hospital ambulance care and to determine what was most important to them. Thus, KMR was critical in ensuring the research centred and supported Māori narratives (Curtis, 2016a; Pihama, 2010; Pihama et al., 2002).

Chapter 5 presents the results from semi-structured interviews that were completed with ten participants and/or whānau and then analysed using a general inductive approach to explore the experiences of cultural (un)safety for Māori who received acute pre-hospital care for chest pain or cardiac symptoms from paramedics and/or the experiences of whānau. This included exploration of the participant's own experience of utilising the ambulance and the care they received; their views on the relationship that they had with the service and officers; concerns about access to, or quality of care by the ambulance service; and their views on what could be done to improve the ambulance service. Enabling the researcher to understand the experiences of Māori and whānau allows for targeted improvements in the cultural appropriateness and safety of acute pre-hospital care for Māori and whānau.

6.3 Key discoveries

6.3.1 Summary of findings

The narrative review highlighted inequities in access to, and quality of, emergency medical services (EMS) cardiovascular care for Māori. Firstly, there are significant pre-hospital delays between symptom(s) onset and defibrillator availability for Māori with ACS, this is due to delayed FMC and reduced availability of PADs (Dicker et al., 2019a; Garofalo et al., 2012). Secondly, Māori had the lowest proportion of transport to hospitals with PCI-capability (Dicker et al., 2019c). Finally, delays in accessing EMS are significantly longer in Māori compared to non-Māori, thus impeding early access to defibrillation and reperfusion (Garofalo et al., 2012; Kerr et al., 2019). Contributing factors to these delays include Māori being more likely to self-transport to hospital or an increase in Māori presenting to their physician or A&M centre before being transported by ambulance (Garofalo et al., 2012).

Findings from the semi-structured interviews demonstrated that Māori experience culturally unsafe pre-hospital care. The research also showed that significant gaps exist regarding the interpersonal interactions between Māori and paramedics, including clinically and culturally appropriate communication, connection, and rapport. Furthermore, systemic, and structural barriers such as timely access to pre-hospital care and representation of Māori within the pre-hospital workforce exist.

Clear and culturally appropriate communication was highlighted as crucial, particulalry when obtaining consent for medication administration and procedures (Leitch et al., 2021). This emphasised the need for in-depth and appropriate explanations that aid in understanding and allow for informed decision-making during the consent process. Communication is vital to ensuring power and autonomy (Leitch et al., 2021; Pene et al., 2022) and is critical given that the research findings highlighted participants being aware they were in the hands of the paramedics, who were the ‘experts’. This feeling of disempowerment is often exaggerated in life-threatening circumstances where patients are vulnerable. Without shared decision-making and good communication, lack of trust and poor care experiences can occur (Anderson et al., 2017; Cram et al., 2003; Levack et al., 2016; Walker et al., 2023). Communication that empowers Māori

to actively participate in decisions about their health is crucial for building trust and creating positive health outcomes.

Past healthcare experiences shaped trust in the health system and impact how Māori perceive and engage in the ambulance service. The process of whakawhānaungatanga, the building of relationships, is crucial in fostering Māori and whānau trust and mitigating any preconceptions about the ambulance service (Anderson et al., 2017; Cram et al., 2003). Whakawhānaungatanaga was shown to be lacking during some participants' experiences due to the prioritisation of clinical skills over connections. Whakawhānaungatnaga must be prioritised and extended beyond simply gaining rapport. This should be established through talking about whakapapa (Levack et al., 2016). Thus, there was a desire for local knowledge, connections, and Māori representation within the paramedic workforce.

This study emphasises socioeconomic barriers, including concerns about the cost of an ambulance and health literacy and symptom knowledge, as key influences regarding the decisions to seek help. Additionally, other structural barriers, such as timely access to ambulance care, also exist, particularly for rural-living Māori (Crengle et al., 2022). These factors are crucial to avoiding poor experiences, particularly given that participants were left feeling upset and unheard following suggestions of self-transport, feeling frustrated that their community is being underserved, and living with an awareness that if they become unwell, they may have to wait for an ambulance. These experiences may, in part, explain research that has highlighted delays in calling 111 for Māori (Garofalo et al., 2012).

These findings also empahsised a desire to shift the healthcare system's focus from curing to prevention. However, the ambulance service's current role in this may be underutilised, particularly in rural communities with limited access to primary healthcare options. It was also evident that the ambulance service has gaps regarding responding to the cultural needs of Māori; some ways to improve these were suggested by participants and included the integration of Mātaurnaga Māori (Māori knowledge), such as the Maramataka and te Whare Tapa Wha. However, cultural safety extends the acquisition of cultural knowledge. Thus, an understanding of Mātauranga Māori and cultural norms is just the beginning and must be accompanied

by an understanding and addressing of bias and stereotypes, as well as acknowledgment and prevention of barriers to clinical effectiveness that arise from power imbalance between patients and practitioners at individual and organisational/systemic levels (Curtis et al., 2019).

6.3.2 Knowledge gaps addressed

Several key gaps have been addressed by this thesis, contributing to the evidence base on pre-hospital experiences of culturally safe cardiovascular care for Māori and whānau.

Firstly, previous research reporting on inequities in outcomes and access to pre-hospital CVD care for Māori was generally completed within a Western lens. This is common as historically, research involving Māori within NZ has perpetuated imperialism by obtaining, analysing, and representing research through Western paradigms and promoted the idea that researchers can know everything about Māori from short encounters (Smith, 2012). Additionally, when appraising research during the narrative review using the CONSIDER statement none of the included studies detailed any governance or partnership with Indigenous stakeholders or outlined the use of Indigenous methodologies, increasing of Indigenous research capacity, and dissemination of research to Indigenous stakeholders (Huria et al., 2019). Therefore, in addition to this research's qualitative approach, the use of KMR allowed for many gaps to be addressed. The research was Māori led, utilising a by-Māori-for-Māori approach, which contributed to increasing Indigenous research capacity and, alongside engagement and consultation, meant the upholding of tino rangatiratanga. This also influenced the methods used for data collection and analysis, and guided tīkanga around karakia and kai, which facilitated the process of whānaungatanga. This increased trust between participants and the researcher further adding richness to the results allowing for a deeper understanding of Māori and whānau experiences of (un)cultural safety in acute pre-hospital cardiovascular care by paramedics.

Secondly, as highlighted in the narrative review, significant inequities exist in access to, and quality of pre-hospital cardiovascular care for Māori, and while literature quantifies these, gaps in understanding experiences for Māori within the pre-hospital context are evident as current research is limited. To the best of the authors

knowledge, this study is the first of its kind to investigate experiences of Māori within the pre-hospital context.

Other NZ based research has demonstrated negative experiences for Māori compared to non-Māori within the healthcare system including poor communication, differential treatment, and intolerance toward cultural needs, resulting in unmet healthcare needs (Health Quality and Safety Commission New Zealand, 2017; Wilson, 2008; Wilson & Barton, 2012). These findings are important as experiences of care and the relationship between Māori and health practitioners influence ongoing engagement in healthcare and, ultimately, outcomes for Māori (Graham & Masters-Awatere, 2020; Mbuzi et al., 2017; Palmer et al., 2019; Pene et al., 2022). While findings from other research in other areas can be drawn upon, the pre-hospital landscape is unique. Some of the findings within this research highlighted similar themes and yet it was also evident from speaking with participants that pre-hospital experiences and expectations are unique. This research has allowed for an understanding of Māori experiences specifically within a pre-hospital context, producing recommendations for targeted improvements in the cultural appropriateness of pre-hospital cardiovascular care for Māori, that can also be applied to other conditions.

Finally, semi-structured interviews with open-ended questions meant the research was participant-led and allowed participants to discuss issues critical to them. Addressing the gap was evident based on the previous lack of qualitative pre-hospital cardiovascular research. The inductive approach meant concepts or theories emerged from data, leading to the broad themes identified in this research. While initially, the author had intended to focus on understanding experiences of cultural safety in interactions between paramedics and Māori, due to the open-ended questions used, participants broadened discussions to include service factors and barriers. While this was not the original intent of the research, this information is invaluable to ensuring structural issues within the ambulance service can be addressed. This also gave privilege to Māori valuing their perspectives from the outset, a gap that was clear based on the lack of qualitative Māori pre-hospital cultural safety and cardiovascular research.

6.4 Strengths

A major strength of this study was the use of a Māori methodological approach was beneficial for Māori, under Māori control, and informed by mātauranga Māori. Ultimately KMR allowed for a Māori centred approach that was underpinned by Māori philosophies and with Māori foundations to ensure tino rangatiratanga (Jones et al., 2010; Pihama, 2010; Pihama et al., 2002; Smith, 2012). It provided a platform for Māori to express their truth based on experiences and supported Māori self-development by providing a system to critique how society and colonialism have adversely affected Māori (Curtis, 2016b; Mahuika, 2008).

6.5 Limitations

While the use of a qualitative methodological approach underpinned by KMR was a major strength of this study, it does have several limitations, many related to the nature of qualitative research.

Firstly, while the findings of this research provide an insight into pre-hospital care from the perspectives of Māori, those findings are not entirely representative or comprehensive as it was limited to those who did phone an ambulance and (unintentionally) may have excluded Māori who avoid accessing pre-hospital care due distrust in the ambulance service. Additionally, while the recruitment and selection of participants aimed to use a purposive sampling method, the methods used may have limited generalisability. A pānui (recruitment flyer) was the main means of recruitment for this study, which invited those who met the inclusion criteria to participate in the study on a voluntary basis. Voluntary participation is central to ethical research practice; however, it can be problematic as those who agree to be involved in interviews may exhibit certain characteristics, such as a higher socioeconomic position or have had a more positive experience (Robinson, 2014). For example, those who have very poor experiences often feel disenfranchised and may be less likely to respond to recruitment flyers and be willing to participate (Ellard-Gray et al., 2015). Consequently, this is a group that may not have been captured and reflected in the results. Further research exploring perceptions of the ambulance within communities and whānau that have less engagement with pre-hospital services is necessary.

Secondly, sample size can also limit generalisability with both theoretical factors and practical considerations influencing the sample (Robinson, 2014). However, while the sample size of this project seems small in comparison to quantitative studies, the number of participants allowed the researcher enough scope to develop cross-experience without being bogged down by large quantities of data. Furthermore, smaller data sets allow participants to have a voice, giving them a defined identity through using direct quotes (Robinson, 2014), avoiding feelings of disempowerment that have been common in more traditional colonial research.

Finally, researcher bias and the potential guiding of participants towards specific topics during interviews, should also be considered as a limitation in the generalisability of findings. However, the use of open-ended questions during semi-structured interviews helped to mitigate researcher bias and increase credibility as it allowed the participants to direct the flow of the interview with the interviewer only intervening for clarity (Johnson et al., 2020). Additionally, it is important to note that in qualitative research the researcher is an integral part of the research process and outcomes, with separation being impossible and undesirable. Instead, the researcher is required to be open, transparent, and reflexive regarding the processes used for data collection, analysis and presentation (Galdas, 2017). The role of the researcher was discussed in chapter four where it was acknowledged that the researcher would play a part in the research process and findings. However, approaches to maintain rigour, such as the use of verbatim quotes and supervisor checks, were used to ensure transparency, increase rigour, and avoid compromising the generalisability of findings.

6.6 Key recommendations and implications for practice

This study has highlighted several areas of interest in the pre-hospital experience of Māori and their Whānau, particularly regarding experiences of (un)cultural safety when accessing pre-hospital cardiovascular care. The findings of the literature review and interviews have informed the following key recommendations to improve experiences of cultural safety for Māori when accessing acute pre-hospital care by paramedics.

Recommendations are made in the areas of cultural safety education, workforce development, access barriers, and further research.

6.6.1 Cultural safety education

Cultural safety is now widely recognised throughout the health system as key to addressing health inequities. The registering body for Paramedicine Te Kaunihera Manapou (2020) outlines the standards for clinical competence, including the minimum skills and knowledge, and professional attributes required to safely and effectively practice as a paramedic in NZ, including the necessity of practicing in a culturally safe manner.

Some knowledge and understanding of te ao Māori (the Māori world) were highlighted as important when working with Māori and whānau. This could include, but is not limited to, the use of te reo Māori and understanding of tīkanga (customs) and mātauranga Māori (Māori knowledge), such as maramataka and te Whare Tapa Whā. Knowledge and understanding, however, can only be driven through education. However, while cultural knowledge is important, cultural safety rejects the notion that health providers should solely focus on learning cultural customs to achieve better care. Instead, an awareness of differences, a consideration for power relationships, and the implementation of reflective practice is required. This lets patients determine whether a clinical encounter is safe or not and stresses the need to priorities patient understanding and actively involve patients in decision-making to facilitate informed consent (Curtis et al., 2019). Therefore, implementing and educating paramedics and students regarding culturally appropriate communication and assessment tools that balance the urgency of a pre-hospital response with connecting and building trust is also necessary. The author recommends that all paramedics should receive appropriate and continuous training in cultural safety. Finally, improvements to make the ambulance service a more culturally affirming environment are also necessary.

6.6.2 Workforce development

Undisputedly, the quality of care received by patients throughout primary, in-hospital and pre-hospital care is directly impacted by the staff within these sectors. Like other healthcare professions, significant underrepresentation of Māori occurs throughout NZ's EMS workforce. As such, only 4.3% of the pre-hospital workforce identified as Māori in 2014, despite Māori making up more than 15% of NZ's overall population (Morrison & Tunnage, 2014). This study also reported that over five years, Māori

accounted for only 7.5% of enrolments within tertiary paramedic education (Morrison & Tunnage, 2014). Increasing Māori representation within the ambulance service will improve understanding, trust, and connections. This involves addressing the underrepresentation of Māori in both the ambulance service and paramedic education. To deliver culturally safe and appropriate care it is essential that a workforce accurately represents the community that it serves, yet with only 131 registered Māori paramedics out of a total 2,223 nation-wide, the EMS workforce within NZ currently does not (Te Kaunihera Manapou, n.d.).

Active promotion and support of an increased representation of Māori in the ambulance service is recommended to address the current underrepresentation. This should be prioritised and requires community engagement to understand barriers that prevent Māori from accessing pre-hospital paramedic education. The fostering of a workplace culture that is supportive and focuses on not only recruiting and training but also retaining Māori staff, is also required.

6.6.3 Access barriers

Several barriers to accessing care exist. It is evident that distrust of healthcare systems and services in general and specifically the ambulance service exists for Māori and whānau. Mechanisms that allow for regular community consultation are required to ensure that the ambulance services remain responsive to the evolving needs and preferences of the communities they serve, particularly Māori communities. This will allow for the involvement of community leaders and cultural experts, such as kaumātua, in decision-making processes to ensure appropriateness of services and will strengthening the relationship between Māori communities and the ambulance service.

Knowledge of symptoms was a common cause of delaying phoning 111, that may contribute to delayed access to definitive care. This emphasies the need for culturally appropriate and accessible health information for Māori and whānau to dispel common misconceptions and provide education on recognising the wide variety of ‘non-specific’ cardiac symptoms. Hence, implementing educational programs and developing resources for and with Māori communities regarding the importance of timely ambulance services is necessary, as national and international research

demonstrates an increase in ambulance calls for CVD conditions such as ACS and stroke following public awareness campaigns (Bray et al., 2023; Bray et al., 2015; Kathryn et al., 2021; Nehme et al., 2016; Te Hiringa Hauora, 2022). However, it is important to note that for these to be relevant and appropriate for Māori, community engagement and co-design are vital in developing these.

Improved healthcare access to pre-hospital care for Māori is necessary with the Ministry of Health (2023) outlining the need to priorities rural healthcare access. This requires accounting for geographical and socio-demographic factors when organising the ambulance service to ensure equitable access to care for Māori. Innovative solutions such as telehealth or screening and education programs on Marae may be needed to bridge gaps in remote areas. Engagement and building relationships should be a priority, as solutions need to be driven by the communities they aim to serve.

6.6.4 Further research

The evidence base for Māori and CVD within the pre-hospital context is minimal, and what does exist mainly focuses on quantitative measurements and outcomes. Both qualitative and quantitative research are needed to comprehensively understand experiences of (un)cultural safety for Māori within the pre-hospital context to better respond to the needs of Māori. This should also include participants who may have previously avoided or may consider avoiding utlising pre-hospital due to previous personal or whānau experiences or perceptions of the ambulance service. Kaupapa Māori research is critical in doing so and thus should be given precedence as it is by Māori and for Māori and prioritises Māori development while focusing on reducing inequalities (Smith, 2012).

In summary, addressing poor experiences for Māori and whānau within the pre-hospital context involves a comprehensive approach that encompasses cultural safety training, increased Māori representation in the paramedic workforce, and systemic changes to improve pre-hospital healthcare access for Māori communities. Ultimately, Māori co-design and a by-Māori approach must be utilised in the implementation of any of the above recommendations as partnership between Māori non-Māori is pivotal in honouring te Tiriti o Waitangi and improving outcomes for Māori.

6.7 Conclusion

This study aimed to explore experiences of pre-hospital cardiovascular care from the perspectives of Māori and whānau to understand experiences of (un)cultural safety in pre-hospital care.

Māori experience culturally unsafe care throughout the health system, and this research highlighted that these experiences also extend into the pre-hospital context. Participants highlighted interpersonal factors such as the significance of effective and appropriate communication and the importance of connecting and building rapport while also describing barriers to accessing ambulance services, including lack of resources and the importance of a representative workforce. The impact of heart health on communities and the need for better preventative care was described, highlighting the role of the ambulance service in heart health. While fewer reports of discriminatory experiences were reported compared to literature in other areas of health, significant gaps exist regarding the interpersonal interactions between Māori and paramedics, and systemic and structural barriers do exist. Addressing workforce representation resource disparities and improving cultural safety education that focuses on communication, partnership, and connection is recommended to improve experiences, ensuring Māori the right to health equity and thus can enjoy the highest possible standard of health and well-being.

References

Anderson, A., Mills, C., & Eggleton, K. (2017, Nov 10). Whānau perceptions and experiences of acute rheumatic fever diagnosis for Māori in Northland, New Zealand. *New Zealand Medical Journal, 130*(1465), 80-88.

ANZCOR. (2011). *Guideline 14 - Acute Coronary Syndromes* https://www.anzcor.org/home/acute-coronary-syndromes/guideline-14-acute-coronary-syndromes/

ANZCOR. (2016a). *Guideline 14.3 - Acute Coronary Syndromes: Reprefusion Strategy*. https://www.anzcor.org/home/acute-coronary-syndromes/guideline-14-acute-coronary-syndromes/

ANZCOR. (2016b). *Guidline 14.2 - Acute Coronary Syndromes: Initial Medical Therapy* https://www.anzcor.org/home/acute-coronary-syndromes/guideline-14-acute-coronary-syndromes/

Arlidge, B., Abel, S., Asiasiga, L., Milne, S. L., Crengle, S., & Ameratunga, S. N. (2009). Experiences of whānau/families when injured children are admitted to hospital: a multi-ethnic qualitative study from Aotearoa/New Zealand. *Ethnicity and Health, 14*(2), 169-183. https://doi.org/10.1080/13557850802307791

Australian Paramedical College. (n.d.). *Paramedic role descriptions*. https://www.apcollege.edu.au/pdf/media-other/paramedic-information-paramedics.org-australian-paramedical-college.apcollege.edu.au.pdf

Bahall, M., Legall, G., & Khan, K. (2020, 2020/06/17). Quality of life among patients with cardiac disease: the impact of comorbid depression. *Health and Quality of Life Outcomes, 18*(1), 189. https://doi.org/10.1186/s12955-020-01433-w

Berghan, G., Came, H., Coupe, N., Doole, C., Fay, J., McCreanor, T., & Simpson, T. (2017). *Te Tiriti o Waitangi-based practice in health promotion*. STIR: Stop Institutional Racism. https://trc.org.nz/sites/trc.org.nz/files/ToW%20practice%20in%20HP%20online.pdf

Bishop, A. R. (1995). *Collaborative research stories: whakawhanaungatanga* [Published Doctoral Dissertaion, University of Otago, Otago, New Zealand, https://ourarchive.otago.ac.nz/handle/10523/531

Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing a qualitative description approach in health care research. *Global Qualitative Nursing Research, 4*. https://doi.org/10.1177/2333393617742282

Bray, J., Howell, S., Nehme, Z., Buttery, A., Stub, D., Cartledge, S., & Finn, J. (2023, Apr). Declining Public Awareness of Heart Attack Warning Symptoms in the Years Following an Australian Public Awareness Campaign: A Cross-Sectional Study. *Heart, Lung & Circulation, 32*(4), 497-505. https://doi.org/10.1016/j.hlc.2023.01.010

Bray, J. E., Straney, L., Barger, B., & Finn, J. (2015, May). Effect of public awareness campaigns on calls to ambulance across Australia. *Stroke, 46*(5), 1377-1380. https://doi.org/10.1161/strokeaha.114.008515

Caelli, K., Ray, L., & Mill, J. (2003). 'Clear as Mud': Toward Greater Clarity in Generic Qualitative Research. *International Journal of Qualitative Methods, 2*(2), 1-13. https://doi.org/10.1177/160940690300200201

Came, H. A., Herbert, S., & McCreanor, T. (2021). Representations of Māori in colonial health policy in Aotearoa from 2006-2016: a barrier to the pursuit of health equity. *Critical Public Health, 31*(3), 338-348. https://doi.org/10.1080/09581596.2019.1686461

Came, H. A., O'Sullivan, D., Kidd, J., & McCreanor, T. (2020). The Waitangi Tribunal's WAI 2575 report: Implications for decolonizing health systems. *Health and Human Rights Journal, 22*(1), 209-220.

Chan, W. C., Wright, C., Riddell, T., Wells, S., Kerr, A., Gala, G., & Jackson, R. (2008). Ethnic and socioeconomic disparities in the prevalence of cardiovascular disease in New Zealand. *New Zealand Medical Journal, 121*(1285), 11-20.

Cooper, L., & Powe, N. (2004). Disparities in patient experiences, health care processes, and outcomes: the role of patient-provider racial, ethnic, and language concordance.

Cram, F., Smith, L., & Johnstone, W. (2003). Mapping the themes of Maori talk about health. *New Zealand Med Journal 116*(1170), 1p–U353.

Crengle, S., Davie, G., Whitehead, J., de Graaf, B., Lawrenson, R., & Nixon, G. (2022, Nov). Mortality outcomes and inequities experienced by rural Māori in Aotearoa New Zealand. *Lancet Reg Health West Pac, 28*, 100570. https://doi.org/10.1016/j.lanwpc.2022.100570

Crotty, M. (1998). *Foundations of social research: Meaning and prespective in the research process.* SAGE Publications.

Curtis, E. (2016a). Indigenous positioning in health research: The importance of Kaupapa Māori theory-informed practice. *An International Journal of Indigenous Peoples, 12*(4), 396-410. https://doi.org/10.20507/AlterNative.2016.12.4.5

Curtis, E. (2016b, 2016/12/01). Indigenous Positioning in Health Research: The importance of Kaupapa Māori theory-informed practice. *AlterNative: An International Journal of Indigenous Peoples, 12*(4), 396-410. https://doi.org/10.20507/AlterNative.2016.12.4.5

Curtis, E., Harwood, M., Riddell, T., Robson, B., Harris, R., Mills, C., & Reid, P. (2010). Access and society as determinants of ischaemic heart disease in indigenous populations. *Heart Lung and Circulation, 19*(5-6), 316-324. https://doi.org/10.1016/j.hlc.2010.04.129

Curtis, E., Jones, R., Tipene-Leach, D., Walker, C., Loring, B., Paine, S., & Reid, P. (2019). Why cultural safety rather than cultural competency is required to achieve health equity: a literature review and recommended definition. *International Journal for Equity in Health, 18*(1), 174. https://doi.org/10.1186/s12939-019-1082-3

Curtis, E., & Reid, P. (2013, Jan). Indigenous Health Workforce Development: challenges and successes of the Vision 20:20 programme. *ANZ Journal of Surgery, 83*(1-2), 49-54. https://doi.org/10.1111/ans.12030

Dicker, B., Garrett, N., Wong, S., McKenzie, H., McCarthy, J., Jenkin, G., Smith, T., Skinner, J. R., Pegg, T., & Devlin, G. (2019a). Relationship between socioeconomic factors, distribution of public access defibrillators and incidence of out-of-hospital cardiac arrest. *Resuscitation, 138*, 53-58.

Dicker, B., Todd, V. F., Tunnage, B., Swain, A., Conaglen, K., Smith, T., Brett, M., Laufale, C., & Howie, G. (2019b). Ethnic disparities in the incidence and outcome from out-of-hospital cardiac arrest: A New Zealand observational study. *Resuscitation, 145*, 56-62. https://doi.org/10.1016/j.resuscitation.2019.09.026

Dicker, B., Todd, V. F., Tunnage, B., Swain, A., Smith, T., & Howie, G. (2019c). Direct transport to PCI-capable hospitals after out-of-hospital cardiac arrest in New Zealand: Inequities and outcomes. *Resuscitation, 142*, 111-116. https://doi.org/10.1016/j.resuscitation.2019.06.283

Ellard-Gray, A., Jeffrey, N. K., Choubak, M., & Crann, S. E. (2015). Finding the Hidden Participant:Solutions for Recruiting Hidden, Hard-to-Reach, and Vulnerable Populations. *International Journal of Qualitative Methods, 14*(5), 1609406915621420. https://doi.org/10.1177/1609406915621420

Espiner, E., Paine, S. J., Weston, M., & Curtis, E. (2021, Nov 26). Barriers and facilitators for Māori in accessing hospital services in Aotearoa New Zealand. *New Zealand Medical Journal, 134*(1546), 47-58.

Farcas, A. M., Joiner, A. P., Rudman, J. S., Ramesh, K., Torres, G., Crowe, R. P., Curtis, T., Tripp, R., Bowers, K., von Isenburg, M., Logan, R., Coaxum, L., Salazar, G., Lozano, M., Jr., Page, D., & Haamid, A. (2022). Disparities in emergency medical services care delivery in the United States: A scoping review. *Prehospital Emergency Care*, 1-14. https://doi.org/10.1080/10903127.2022.2142344

Fossey, E., Harvey, C., Mcdermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry, 36*(6), 717-732. https://doi.org/10.1046/j.1440-1614.2002.01100.x

Garofalo, D., Grey, C., Lee, M., Exeter, D., & Kerr, A. (2012). Pre-hospital delay in acute coronary syndromes: PREDICT CVD-18. *New Zealand Medical Journal, 125*(1348), 12-22.

Graham, R., & Masters-Awatere, B. (2020). Experiences of Māori of Aotearoa New Zealand's public health system: a systematic review of two decades of published qualitative research. *Australian and New Zealand Journal of Public Health, 44*(3), 193-200. https://doi.org/https://doi.org/10.1111/1753-6405.12971

Grant, B. M., & Giddings, L. S. (2002). Making sense of methodologies: A paradigm framework for the novice researcher. *Contemporary Nurse, 13*(1), 10-28.

Greenhalgh, T., Thorne, S., & Malterud, K. (2018). Time to challenge the spurious hierarchy of systematic over narrative reviews? *European Journal of Clinical Investigation, 48*(6), e12931. https://doi.org/https://doi.org/10.1111/eci.12931

Grey, C., Jackson, R., Wells, L., Wu, B., Poppe, K., Harwood, M., McDonald-Sundborn, G., & Kerr, A. J. (2018a). Trends in ischaemic heart disease: patterns of hospitalisation and mortality rates differ by ethnicity (ANZACS-QI 21).

Grey, C., Jackson, R., Wells, S., Marshall, R., Mehta, S., & Kerr, A. (2016a). Ethnic differences in case fatality following an acute ischaemic heart disease event in New Zealand: ANZACS-QI 13. *European Journal of Preventive Cardiology, 23*(17), 1823-1830. https://doi.org/10.1177/2047487316657671

Grey, C., Jackson, R., Wells, S., Randall, D., Harwood, M., Mehta, S., Exeter, D. J., & Kerr, A. (2016b). Ethnic differences in coronary revascularisation following an acute coronary syndrome in New Zealand: A national data-linkage study

(ANZACS-QI 12). *Heart Lung and Circulation, 25*(8), 820-828. https://doi.org/10.1016/j.hlc.2016.03.004

Grey, C., Jackson, R., Wells, S., Thornley, S., Marshall, R., Crengle, S., Harrison, J., Riddell, T., & Kerr, A. (2014). Maintenance of statin use over 3 years following acute coronary syndromes: a national data linkage study (ANZACS-QI-2). *Heart, 100*(10), 770-774. https://doi.org/10.1136/heartjnl-2013-304960

Grey, C., Jackson, R., Wells, S., Wu, B., Poppe, K., White, H., Chan, W. C., & Kerr, A. (2018b, Jan). First and recurrent ischaemic heart disease events continue to decline in New Zealand, 2005-2015. *Heart, 104*(1), 51-57. https://doi.org/10.1136/heartjnl-2017-311613

Guba, E. G. (1990). *The paradigm dialog*. SAGE Publications.

Haitana, T., Pitama, S., Cormack, D., Clarke, M., & Lacey, C. (2020). The transformative potential of Kaupapa Māori research and indigenous methodologies: Positioning Māori patient experiences of mental health services. *International Journal of Qualitative Methods, 19*, 1609406920953752. https://doi.org/10.1177/1609406920953752

Hall, W. J., Chapman, M. V., Lee, K. M., Merino, Y. M., Thomas, T. W., Payne, B. K., Eng, E., Day, S. H., & Coyne-Beasley, T. (2015, Dec). Implicit Racial/Ethnic Bias Among Health Care Professionals and Its Influence on Health Care Outcomes: A Systematic Review. *American Journal of Public Health, 105*(12), e60-76. https://doi.org/10.2105/ajph.2015.302903

Harris, R., Cormack, D., & Stanley, J. (2019, 2019/02/01/). Experience of racism and associations with unmet need and healthcare satisfaction: the 2011/12 adult

New Zealand Health Survey. *Australian and New Zealand Journal of Public Health, 43*(1), 75-80. https://doi.org/https://doi.org/10.1111/1753-6405.12835

Harris, R., Tobias, M., Jeffreys, M., Waldegrave, K., Karlsen, S., & Nazroo, J. (2006). Effects of self-reported racial discrimination and deprivation on Māori health and inequalities in New Zealand: cross-sectional study. *Lancet, 367*(9527), 2005-2009. https://doi.org/10.1016/s0140-6736(06)68890-9

Hato Hone St John. (2022). *Pūrongo-ā-tau o Hato Hone: Hato Hone St John Annual Report 2022*.

Health Quality and Safety Commission New Zealand. (2017). *A window on the quality of New Zealand's health care*. https://www.hqsc.govt.nz/assets/Health-Quality-Evaluation/PR/A_Window_on_the_Quality_of_NZ_Health_Care_2017.pdf

Heart Foundation. (2022). *Coronary artery disease*. https://www.heartfoundation.org.nz/your-heart/heart-conditions/coronary-artery-disease

Heart Foundation. (2023). *What is a heart attack?* https://www.heartfoundation.org.nz/your-heart/heart-conditions/about-heart-attacks

Huria, T., Palmer, S. C., Pitama, S., Beckert, L., Lacey, C., Ewen, S., & Smith, L. T. (2019). Consolidated criteria for strengthening reporting of health research involving indigenous peoples: the CONSIDER statement. *BMC Medical Research Methodology, 19*(1), 173. https://doi.org/10.1186/s12874-019-0815-8

Ibanez, B., James, S., Agewall, S., Antunes, M. J., Bucciarelli-Ducci, C., Bueno, H., Caforio, A. L. P., Crea, F., Goudevenos, J. A., Halvorsen, S., Hindricks, G., Kastrati, A., Lenzen, M. J., Prescott, E., Roffi, M., Valgimigli, M., Varenhorst, C., Vranckx, P., & Widimský, P. (2018, Jan 7). 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). *European Heart Journal, 39*(2), 119-177. https://doi.org/10.1093/eurheartj/ehx393

Jabir, A. M., Hasabo, E. A., Ahmed, G. E., Abdalla, M. A., Omer, M. H., Ahmed, A. M., & Suliman, A. A. A. (2021, 2021/12/01/). Prehospital Delay and its Impact on 30 days Outcomes in patients with Myocardial Infarction in Alshaab teaching hospital, Khartoum November2020-April 2021. *American Heart Journal, 242*, 167. https://doi.org/https://doi.org/10.1016/j.ahj.2021.10.055

Johnston, S., Brightwell, R., & Ziman, M. (2006, May). Paramedics and pre-hospital management of acute myocardial infarction: diagnosis and reperfusion. *Emergency Medicine Journal, 23*(5), 331-334. https://doi.org/10.1136/emj.2005.028118

Jones, B., Ingham, T., Davies, C., & Cram, F. (2010). Whānau Tuatahi: Māori community partnership research using a Kaupapa Māori methodology. *MAI Review, 3*, 1-14.

Jones, C. P. (2000, Aug). Levels of racism: a theoretic framework and a gardener's tale. *American Journal of Public Health, 90*(8), 1212-1215. https://doi.org/10.2105/ajph.90.8.1212

Jones, C. P. (2001). Invited commentary: "race," racism, and the practice of epidemiology. *American Journal of Epidemiology, 154*(4), 299-304. https://doi.org/10.1093/aje/154.4.299

Kathryn, E., Stuart, H., Ziad, N., Judith, F., Karen, S., Peter, C., Dion, S., & Janet, E. B. (2021). Impact of a mass media campaign on presentations and ambulance use for acute coronary syndrome. *Open Heart, 8*(2), e001792. https://doi.org/10.1136/openhrt-2021-001792

Kaunihera Manapou. (n.d.). *Paramedic registration update*. Retrieved September 1, 2023 from https://paramediccouncil.org.nz/PCNZ/_Web/Public/News/Paramedic-Registration-Update.aspx#:~:text=Paramedic%20Registration%20under%20the%20Health,and%20registered%20under%20the%20HPCA.

Kerr, A., Lee, M., Grey, C., Pegg, T., Fisher, N., White, H., Nunn, C., Williams, M., Smyth, D., Scott, T., Chen, R., Zhao, J., Tun, T. R., Harwood, M., & Devlin, G. (2019). Acute reperfusion for ST-elevation myocardial infarction in New Zealand (2015-2017): patient and system delay (ANZACS-QI 29). *New Zealand Medical Journal, 132*(1498), 41-59.

Kerr, A., Mustafa, A., Lee, M., Wells, S., Grey, C., Riddell, T., & Harrison, W. (2014). Ethnicity and revascularisation following acute coronary syndromes: a 5-year cohort study (ANZACS-QI-3). *New Zealand Medical Journal 127*(1393), 38-51. https://pubmed.ncbi.nlm.nih.gov/24816955/

Kerr, S., Penney, L., Moewaka Barnes, H., & McCreanor, T. (2010). Kaupapa Maori action research to improve heart disease services in Aotearoa, New Zealand. *Ethnicity and Health, 15*(1), 15-31.

Lacey, C., Huria, T., Beckert, L., Gilles, M., & Pitama, S. (2011, Dec 16). The Hui Process: a framework to enhance the doctor-patient relationship with Māori. *New Zealand Medical Journal, 124*(1347), 72-78.

Latifnejad Roudsari, R. (2019). Critical appraisal of research evidence at a glance. *Journal of Midwifery & Reproductive Health 7*(3), 1716-1717. https://doi.org/10.22038/JMRH.2019.13369

LaVeist, T. A., Nuru-Jeter, A., & Jones, K. E. (2003). The association of doctor-patient race concordance with health services utilization. *Journal of Public Health Policy, 24*(3-4), 312-323.

Leitch, S., Smith, A., Crengle, S., & Stokes, T. (2021, Feb 10). The views of New Zealand general practitioners and patients on a proposed risk assessment and communication tool: a qualitative study using Normalisation Process Theory. *Implement Sci Commun, 2*(1), 16. https://doi.org/10.1186/s43058-021-00120-1

Levack, W. M., Jones, B., Grainger, R., Boland, P., Brown, M., & Ingham, T. R. (2016). Whakawhanaungatanga: the importance of culturally meaningful connections to improve uptake of pulmonary rehabilitation by Māori with COPD - a qualitative study. *International Journal of Chronic Obstructive Pulmonary Disease, 11*, 489-501. https://doi.org/10.2147/copd.S97665

Liao, B. Y., Lee, M. A. W., Dicker, B., Todd, V. F., Stewart, R., Poppe, K., & Kerr, A. (2022, Jan). Prehospital identification of ST-segment elevation myocardial infarction and mortality (ANZACS-QI 61). *Open Heart, 9*(1). https://doi.org/10.1136/openhrt-2021-001868

Lilley, R., de Graaf, B., Kool, B., Davie, G., Reid, P., Dicker, B., Civil, I., Ameratunga, S., & Branas, C. (2019, Jul 26). Geographical and population disparities in timely access to prehospital and advanced level emergency care in New Zealand: a cross-sectional study. *BMJ Open, 9*(7), e026026. https://doi.org/10.1136/bmjopen-2018-026026

Mahuika, R. (2008). Kaupapa Māori theory is critical and anti-colonial. *MAI Review, 3*(4), 1-16.

Marcelin, J. R., Siraj, D. S., Victor, R., Kotadia, S., & Maldonado, Y. A. (2019). The impact of unconscious bias in healthcare: how to recognize and mitigate it. *The Journal of infectious diseases, 220*(Supplement_2), S62-S73.

Mbuzi, V., Fulbrook, P., & Jessup, M. (2017). Indigenous peoples' experiences and perceptions of hospitalisation for acute care: A metasynthesis of qualitative studies. *International Journal of Nursing Studies, 71*, 39-49. https://doi.org/10.1016/j.ijnurstu.2017.03.003

McAloon, C. J., Boylan, L. M., Hamborg, T., Stallard, N., Osman, F., Lim, P. B., & Hayat, S. A. (2016). The changing face of cardiovascular disease 2000-2012: An analysis of the world health organisation global health estimates data. *International Journal of Cardiology, 224*, 256-264. https://doi.org/10.1016/j.ijcard.2016.09.026

McNamara, R. L., Wang, Y., Herrin, J., Curtis, J. P., Bradley, E. H., Magid, D. J., Peterson, E. D., Blaney, M., Frederick, P. D., & Krumholz, H. M. (2006, Jun 6). Effect of door-to-balloon time on mortality in patients with ST-segment elevation myocardial infarction. *Journal of the American College of Cardiology, 47*(11), 2180-2186. https://doi.org/10.1016/j.jacc.2005.12.072

Meredith, C., McKerchar, C., & Lacey, C. (2023). Indigenous approaches to perinatal mental health: a systematic review with critical interpretive synthesis. *Archives of Women's Mental Health, 26*(3), 275-293. https://doi.org/10.1007/s00737-023-01310-7

Merriam, S. B. (2002). *Qualitative research in practice: Examples for discussion and analysis* (1st ed.). Wiley.

Miner-Williams, W. (2017). Racial inequities in cardiovascular disease in New Zealand. *Diversity and Equality in Health and Care, 14*(1), 23-33.

Ministry of Health. (2012). *The health of New Zealand adults 2011/12: Key findings of the New Zealand Health Survey.* . M. o. Health. https://www.moh.govt.nz/NoteBook/nbbooks.nsf/0/C4DBAC9A2CAA0387CC257AF70004634E

Ministry of Health. (2015). *Mortality and Demographic Data 2012*. Minstry of Health.

Ministry of Health. (2016a). *Annual Update of Key Results 2015/16: New Zealand Health Survey*. Minstry of Health.

Ministry of Health. (2016b). *Health Loss in New Zealand 1990-2013: A report from the New Zealand Burden of Diseases, Injuries and Risk Factors Study*. Ministry of Health.

Ministry of Health. (2018a). *Cardiovascular Disease Risk Assessment and Management for Primary Care*. https://www.health.govt.nz/system/files/documents/publications/cardiovascular-disease-risk-assessment-management-primary-care-feb18-v4_0.pdf

Ministry of Health. (2018b). *Health and Independence Report 2017. The Director-General of Health's Annual Report on the State of Public Health*.

Ministry of Health. (2018c). *Neighbourhood deprivation*. https://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics/nga-awe-o-te-hauora-socioeconomic-determinants-health/neighbourhood-deprivation

Ministry of Health. (2023). *Rural Health Stratgey 2023*

Ministry of Social Development. (2016). *The Social Report 2016: Te pūrongo oranga tangata*. Ministry of Social Development.

Morrison, T. A., & Tunnage, B. (2014). Reporting Māori participation in paramedic education and the EMS workforce in New Zealand. *Australasian Journal of Paramedicine, 11*, 1-6.

Moyle, P. (2014). A model for Maori research for Maori practitioners. *Aotearoa New Zealand Social Work, 26*(1), 29-38.

National Ambulance Sector Clinical Working Group. (n.d.). *Emergency Ambulance Service: Clinical Procedures and Guidelines*. Retrieved 6 September, 2023 from https://cpg.stjohn.org.nz/tabs/guidelines

Nehme, Z., Andrew, E., Bernard, S., Patsamanis, H., Cameron, P., Bray, J. E., Meredith, I. T., & Smith, K. (2016). Impact of a public awareness campaign on out-of-hospital cardiac arrest incidence and mortality rates. *European Heart Journal, 38*(21), 1666-1673. https://doi.org/10.1093/eurheartj/ehw500

Newport, R., Grey, C., Dicker, B., Brewer, K., Amertunga, S., Selak, V., Hanchard, S., Taueetia-Su'a, T., & Harwood, M. (2023, 10/01). Upholding te mana o te wā: Māori patients and their families' experiences of accessing care following an out-of-hospital cardiac event. *American Heart Journal Plus: Cardiology Research and Practice, 36*, 100341. https://doi.org/10.1016/j.ahjo.2023.100341

Nilsson, G., Mooe, T., Söderström, L., & Samuelsson, E. (2016, May 12). Pre-hospital delay in patients with first time myocardial infarction: an observational study in a northern Swedish population. *BMC Cardiovascular Disorders, 16*, 93. https://doi.org/10.1186/s12872-016-0271-x

O'Meara, P., & Duthie, S. (2018). Paramedicine in Australia and New Zealand: A comparative overview. *Australian Journal of Rural Health, 26*(5), 363-368.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ, 372*, n71. https://doi.org/10.1136/bmj.n71

Palmer, S. C., Gray, H., Huria, T., Lacey, C., Beckert, L., & Pitama, S. G. (2019). Reported Māori consumer experiences of health systems and programs in qualitative research: a systematic review with meta-synthesis. *International Journal for Equity in Health, 18*(1), 163. https://doi.org/10.1186/s12939-019-1057-4

Papps, E., & Ramsden, I. (1996). Cultural safety in nursing: The New Zealand experience. *International Journal for Quality in Health Care, 8*(5), 491-497.

Pene, B. J., Aspinall, C., Wilson, D., Parr, J., & Slark, J. (2022). Indigenous Māori experiences of fundamental care delivery in an acute inpatient setting: A qualitative analysis of feedback survey data. *Journal of Clinical Nursing, 31*(21-22), 3200-3212. https://doi.org/10.1111/jocn.16158

Pharmac. (2019). *Achieving medicine access equity in Aotearoa New Zealand: Towards a thoery of change*

Pihama, L. (2010). Kaupapa Māori theory: transforming theory in Aotearoa. *He Pukenga Korero, 9*(2), 5-14.

Pihama, L., Cram, F., & Walker, S. S. (2002). Creating methodological space: A Literature review of Kaupapa Maori research. *Canadian Journal of Native Education, 26*, 30-43. https://doi.org/https://doi.org/10.14288/cjne.v26i1.195910

Reid, J., Cormack, D., & Crowe, M. (2016, Apr). The significance of relational continuity of care for Māori patient engagement with predominantly non-Māori doctors: findings from a qualitative study. *Australian and New Zealand Journal of Public Health, 40*(2), 120-125. https://doi.org/10.1111/1753-6405.12447

Reid, P., Cormack, D., & Paine, S. J. (2019). Colonial histories, racism and health-The experience of Māori and Indigenous peoples. *Public Health, 172*, 119-124. https://doi.org/10.1016/j.puhe.2019.03.027

Reid, P., & Robson, B. (2007). Understanding health inequities. In B. Robson & P. Reid (Eds.), *Hauora: Māori standards of health IV. A study of the years 2000-2005* (pp. 3-10). Te Rōpū Rangahau Hauora a Eru Pōmare.

Reid, P., Robson, B., & Jones, C. P. (2000). Disparities in health: common myths and uncommon truths. *Pacific Health Dialogue, 7*(1), 38-47.

Roth, G. A., Mensah, G. A., Johnson, C. O., Addolorato, G., Ammirati, E., Baddour, L. M., Barengo, N. C., Beaton, A. Z., Benjamin, E. J., Benziger, C. P., Bonny, A., Brauer, M., Brodmann, M., Cahill, T. J., Carapetis, J., Catapano, A. L., Chugh, S. S., Cooper, L. T., Coresh, J., Criqui, M., DeCleene, N., Eagle, K. A., Emmons-Bell, S., Feigin, V. L., Fernández-Solà, J., Fowkes, G., Gakidou, E., Grundy, S. M., He, F. J., Howard, G., Hu, F., Inker, L., Karthikeyan, G., Kassebaum, N., Koroshetz, W., Lavie, C., Lloyd-Jones, D., Lu, H. S., Mirijello, A., Temesgen, A. M., Mokdad, A., Moran, A. E., Muntner, P., Narula, J., Neal, B., Ntsekhe, M., Moraes de Oliveira, G., Otto, C., Owolabi, M., Pratt, M., Rajagopalan, S., Reitsma, M., Ribeiro, A. L. P., Rigotti, N., Rodgers, A., Sable, C., Shakil, S., Sliwa-Hahnle, K., Stark, B., Sundström, J., Timpel, P., Tleyjeh, I. M., Valgimigli, M., Vos, T., Whelton, P. K., Yacoub, M., Zuhlke, L., Murray, C., & Fuster, V. (2020). Global burden of cardiovascular diseases and risk factors, 1990-2019: Update from the GBD 2019 study. *Journal of the American College of Cardiology, 76*(25), 2982-3021. https://doi.org/10.1016/j.jacc.2020.11.010

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health, 23*(4), 334-340.

Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health, 33*(1), 77-84. https://doi.org/10.1002/nur.20362

Sandiford, P., Bramley, D. M., El-Jack, S. S., & Scott, A. G. (2015). Ethnic differences in coronary artery revascularisation in New Zealand: does the inverse care law still apply? *Heart Lung and Circulation, 24*(10), 969-974. https://doi.org/10.1016/j.hlc.2015.03.013

Selak, V., Poppe, K., Grey, C., Mehta, S., Winter-Smith, J., Jackson, R., Wells, S., Exeter, D., Kerr, A., Riddell, T., & Harwood, M. (2020). Ethnic differences in cardiovascular risk profiles among 475,241 adults in primary care in Aotearoa, New Zealand. *New Zealand Medical Journal, 133*(1521), 14-27.

Silburn, K., Reich, H., & Anderson, I. (2016). *A global snapshot of Indigenous and tribal peoples' health: The Lancet–Lowitja Institute Collaboration*. The Lowitja Institute.

Smith, G. H. (1992). *"Tane-nui-a-rangi's legancy: Propping up the sky. Kaupapa Maori as Resistance and Intervention.* NZARE/AARE Joint conference, Deakin University, VIC, Australia. https://www.aare.edu.au/data/publications/1992/smitg92384.pdf

Smith, G. H. (2003). *Kaupapa Maori Theory: Theorizing Indigenous Transformation of Education & Schooling* NZARE/AARE Joint Conference, Hyatt Hotel, Auckland, New Zealand https://www.aare.edu.au/data/publications/2003/pih03342.pdf

Smith, L. T. (2012). *Decolonizing Methodologies: Research and Indigenous Peoples* (2nd ed.). Otago Press.

Smith, L. T. (2015). Kaupapa Māori research- Some Kaupapa Māori principles. In L. Pihama & K. South (Eds.), *Kaupapa Rangahau A Reader: A Collection of Readings from the Kaupapa Maori Research Workshop Series Led* (pp. 46-52). Te Kotahi Research Institute. https://hdl.handle.net/10289/12026

Statistics New Zealand. (2015). *New Zealand period life tables: 2012-14*. https://www.stats.govt.nz/information-releases/new-zealand-period-life-tables-201214

Swain, A. H., Hoyle, S. R., & Long, A. W. (2010). The changing face of prehospital care in New Zealand: the role of extended care paramedics. *The New Zealand Medical Journal (Online), 123*(1309).

Takeshita, J., Wang, S., Loren, A. W., Mitra, N., Shults, J., Shin, D. B., & Sawinski, D. L. (2020). Association of Racial/Ethnic and Gender Concordance Between Patients and Physicians With Patient Experience Ratings. *JAMA Network Open, 3*(11), e2024583-e2024583. https://doi.org/10.1001/jamanetworkopen.2020.24583

Te Hiringa Hauora. (2022). *2019-2021 Stroke FAST Campaign evaluation: Interim report* https://www.hpa.org.nz/research-library/research-publications/2019-2021-stroke-fast-campaign-evaluation-interim-report

Te Kaunihera Manapou. (2020). *Standards of Cultural Safety and Clinical Competence for Paramedics* https://paramediccouncil.org.nz/PCNZ/PCNZ/0.Te-Tiriti/Standards-.aspx

Te Kaunihera Manapou. (n.d.). *Ngā Tauanga Manapou: Paramedic registration statistics*. Retrieved December 8 from https://paramediccouncil.org.nz/PCNZ/PCNZ/Paramedic-Statistics.aspx

Thim, T., Krarup, N. H., Grove, E. L., Rohde, C. V., & Løfgren, B. (2012). Initial assessment and treatment with the Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach. *International Journal of General Medicine, 5*, 117-121. https://doi.org/10.2147/ijgm.S28478

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation, 27*(2), 237-246.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology, 8*, 45. https://doi.org/10.1186/1471-2288-8-45

Thorne, S., Kirkham, S. R., & O'Flynn-Magee, K. (2004). The Analytic Challenge in Interpretive Description. *International Journal of Qualitative Methods, 3*(1), 1-11. https://doi.org/10.1177/160940690400300101

Todd, V. F., Swain, A., Howie, G., Tunnage, B., Smith, T., & Dicker, B. (2021, Jan 25). Factors Associated with Emergency Medical Service Reattendance in Low Acuity Patients Not Transported by Ambulance. *Prehospital Emergency Care*, 1-17. https://doi.org/10.1080/10903127.2020.1862943

Tubaro, M., Danchin, N., Goldstein, P., Filippatos, G., Hasin, Y., Heras, M., Jansky, P., Norekval, T. M., Swahn, E., Thygesen, K., Vrints, C., Zahger, D., Arntz, H. R., Bellou, A., De La Coussaye, J. E., De Luca, L., Huber, K., Lambert, Y., Lettino, M., Lindahl, B., McLean, S., Nibbe, L., Peacock, W. F., Price, S., Quinn, T., Spaulding, C., Tatu-Chitoiu, G., & Van De Werf, F. (2011, Jun). Pre-hospital treatment of STEMI patients. A scientific statement of the Working Group Acute Cardiac Care of the European Society of Cardiology. *Acute Cardiac Care, 13*(2), 56-67. https://doi.org/10.3109/17482941.2011.581292

United Nations. (2007). *United Nations Declaration on the Rights of Indigenous Peoples*. https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

United Nations. (n.d.). *Indigenous Peoples at the United Nations*. https://www.un.org/development/desa/indigenouspeoples/about-us.html

van Ryn, M., Burgess, D. J., Dovidio, J. F., Phelan, S. M., Saha, S., Malat, J., Griffin, J. M., Fu, S. S., & Perry, S. (2011, Apr 1). The impact of racism on clinical conginition, behavior,and clinical decision making *Du Bois Rev, 8*(1), 199-218. https://doi.org/10.1017/s1742058x11000191

Waitangi Tribunal. (2019). *Hauora: Report on Stage One of the Health Services and Outcomes Kupapa Inquiry. WAI2575*. Legislation Direct.

Walker, R. C., Abel, S., Palmer, S. C., Walker, C., Heays, N., & Tipene-Leach, D. (2023, Feb). "We Need a System that's Not Designed to Fail Māori": Experiences of Racism Related to Kidney Transplantation in Aotearoa New Zealand. *J Racial Ethn Health Disparities, 10*(1), 219-227. https://doi.org/10.1007/s40615-021-01212-3

Walsh, M., & Grey, C. (2019). The contribution of avoidable mortality to the life expectancy gap in Māori and Pacific populations in New Zealand-a decomposition analysis. *New Zealand Medical Journal, 132*(1492), 46-60.

Westbrooke, I., Baxter, J., & Hogan, J. (2001). Are Maori under-served for cardiac interventions? *New Zealand Medical Journal, 114*(1143), 484-487.

Wilkinson-Stokes, M. (2021). A taxonomy of Australian and New Zealand paramedic clinical roles. *Australasian Journal of Paramedicine, 18*, 1-20.

Williams, M. J., Harding, S. A., Devlin, G., Nunn, C., El-Jack, S., Scott, T., Lee, M., & Kerr, A. (2016). National variation in coronary angiography rates and timing after an acute coronary syndrome in New Zealand (ANZACS-QI 6). *New Zealand Medical Journal, 129*(1428), 66-78.

Wilson, D. (2008). The significance of a culturally appropriate health service for Indigenous Māori women. *Contempary Nurse, 28*(1-2), 173-188. https://doi.org/10.5172/conu.673.28.1-2.173

Wilson, D., & Barton, P. (2012). Indigenous hospital experiences: a New Zealand case study. *Journal of Clinical Nursing, 21*(15-16), 2316-2326. https://doi.org/10.1111/j.1365-2702.2011.04042.x

Wilson, D., Mikahere-Hall, A., & Sherwood, J. (2022). Using indigenous kaupapa Māori research methodology with constructivist grounded theory: generating a theoretical explanation of indigenous womens realities. *International Journal of Social Research Methodology, 25*(3), 375-390. https://doi.org/10.1080/13645579.2021.1897756

Wright, K., Tapera, R. M., Stott, N. S., Sorhage, A., Mackey, A., & Williams, S. A. (2022). Indigenous health equity in health register ascertainment and data quality: a narrative review. *International Journal for Equity in Health, 21*(1), 34. https://doi.org/10.1186/s12939-022-01635-2

Glossary

Māori	**English**
Ako	To learn, teach, study
Aotearoa	New Zealand
Hapū	Sub-tribe
Iwi	Tribe
Kanohi ki te Kanohi	Face-to-face
Karakia	Prayer
Kaupapa	Set of principles, concept, ideology
Kaupapa Māori	Māori ideology
Koha	Gift, present, donation, contribution, offering
Maramataka	The Māori lunar/moon calendar
Kōrero	To talk
Kupu	Word
Rōpū	Organised group of people
Taonga	Treasured possessions
Taonga taku iho	Treasures of Māori heritage
Te Ao Māori	The Māori world
Te reo	The language (literally), the language of Māori
Te Tiriti o Waitangi	The Treaty of Waitangi
Tikanga	Customs
Tino Rangatiratanga	Chieftainship, autonomy, self-rule, sovereignty, self-determination
Tiriti	Treaty
Wānanga	to meet and openly discuss, gathering together to discuss thoughts, experiences and opinions
Whakamā	Shy, embarrassed, ashamed

Māori	**English**
Whakamana	Empowerment, enabling
Whakapapa	Genealogy, family tree, ancestry
Whānau	Family
Whānaungatanga	The making and retaining of relationships
Whakawhānaungatanga	The process by which relationships are made
Whare Tapa Whā	Māori health concept/model
Whenua	Land

Appendices

Appendices 1. Ethics Approval

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

2 December 2021

Bridget Dicker
Faculty of Health and Environmental Sciences

Dear Bridget

Re Ethics Application: **21/388 Cultural safety in paramedic practice: Experiences of Māori and whānau**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 2 December 2024.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: sarah.penney@aut.ac.nz

Appendices 2. Interview prompts and schedule

Patient/whānau interview schedule

- Did you access care for you personally or for your whanau?
- So if we can start by talking to me about the day you called the ambulance – what were you doing and what was happening when you phoned them?
- How was your experience of calling and utlising the ambulance?
- Tell me about the care that you/your whānau have received from the ambulance officers.
- Was there anything that was good?
- Was there anything that was bad?
- Tell me about the views of relationship you have with the ambulance officer/service. What made you feel comfortable and/or uncomfortable?
- What is important for you when it comes to heart health?
- Have you ever been concerned about the accessing care from the ambulance?
- Have you ever been concerned about the quality of care given by the ambulance?
- Is there anything else we should be looking at to have a good ambulance service for Māori? Especially for heart disease?

Appendices 3. Pānui (recruitment flyer)

manawataki Fatu Fatu

AUT
TE WĀNANGA ARONUI O TĀMAKI MAKAURAU

Tēnā koutou katoa

HELP US UNDERSTAND EXPERIENCES OF PRE-HOSPITAL AMBULANCE CARE FOR MĀORI

What?

We would like to understand the experiences of Māori who received care from St John Ambulance staff for heart symptoms (chest pain, shortness of breath, racing heart) in the Auckland or Northland region between January 2018 and January 2024, and/or their whānau.

How?

It involves a 30-60 minute interview with a researcher either in person, over the phone or by Zoom. Questions include:

- what went well and what didn't
- how can we improve training for ambulance staff.

Interested?

Please contact Sarah Penney on 09 921 9999 ext. 5587 or sarah.penney@aut.ac.nz for more information.

Other important information

- This study is part of Sarah Penney's Master's degree. Dr Bridget Dicker and Associate Professor Matire Harwood are co-investigators/supervisors
- Everything you say will be made anonymous and your details are confidential
- The study is approved by Auckland University of Technology Ethics Committee Application 21/388
- A koha ($50 supermarket voucher) is provided in thanks for your time
- This project is part of a bigger study to improve heart-health outcomes for Maori and Pacific people

This study sits within the Manwataki:Fatu Fatu programme of research – for more information see https://www.manawafatu.org/programme/

Appendices 4. Participant information sheet

Participant Information Sheet

Date Information Sheet Produced: 7th October 2021

Project title:	Manawataki: Fatu fatu for ACCESS (Māori and Pacific hearts in unison for Achieving Cardiovascular Care in Equity StudieS) - Cultural safety in paramedic practice: Experiences of Māori and whānau.
Researcher:	**Sarah Penney, Bridget Dicker** and **Associate Professor Dr Matire Harwood** Sarah Penney is a Paramedic. Her iwi is Te Rarawa. She is a lecturer at Auckland University of Technology. Bridget Dicker is a Paramedic. She is a Researcher at St John ambulance and at Auckland University of Technology Dr Harwood is a general practitioner. Her iwi is Ngāpuhi. She is a lecturer at The University of Auckland.

Primary Researcher's contact details:

Sarah Penney sarah.penney@aut.ac.nz

Phone +649 921 9999 EXT 5587

Kia Ora,

You are invited to take part in a programme of research aiming to achieve equity in cardiovascular disease. This study is funded by the Heart Foundation and Healthier Lives National Science Challenge.

We are investigating:

Experiences of Māori and their whānau who have received acute pre-hospital care for cardiac symptoms from paramedics.

Why are we doing this study?

We know that there are inequities in cardiovascular disease outcomes for Māori. "Inequity" means an unfair difference. Cardiovascular disease is the most important contributor to avoidable deaths in Māori. We aim to:

- Understand the experiences of Māori patients and whānau receiving cardiovascular care from paramedics.
- Use this information to raise awareness of cultural issues for Māori receiving acute pre-hospital care, to inform the development of educational material in paramedic education and to broaden paramedics understanding, enabling them to better respond to the cultural needs of Māori.

Do I have to take part in this study?

No. You can choose if you want to take part in the study. Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

If you decide not to take part, this will not affect any treatment you (or your whānau) are receiving. If you decide to take part, you can change your mind at any time. You do not have to give a reason.

This information sheet will give you information about the study. It may help you decide if you would like to take part. Please tell us if you have any questions.

Can I think about it for a while?

Yes. You can take some time to think about whether you want to take part in this study. You can talk about it with your whānau or friends.

If you agree to participate, we will ask you to sign a consent form.

Who will be in this study?

- Patients who have been attended to by the St John Ambulance service between January 1, 2018, and August 31, 2022, for cardiac symptoms.
- or had whānau who were attended to by St Johns Ambulance service for cardiac symptoms.

Who are:

- Aged 30 years or older
- Identify as Māori
- Able to give informed consent
- Able to participate in an interview

What will I have to do?

We will ask you to share your experiences when accessing cardiovascular care from paramedics. The interview will take approximately 60 minutes.

You can choose which language to speak in the interview. We might need to use an interpreter. You do not have to answer all the questions. We will make an audio recording of the discussion.

You can choose when we do the interview, where we do the interview, and who comes to the interview. You do not need any money to take part in this study.

What will happen with the information that I provide?

The recording of the interview will be transcribed (written down). The researchers will listen to the recording and read the transcription. We may use your ideas to help to raise awareness of cultural issues for Māori receiving acute pre-hospital care, to

inform the development of educational material in paramedic education and to broaden paramedics understanding, enabling them to better respond to the cultural needs of Māori.

When we write up the research, we might quote you (use your words). You can choose the name you would like to be called. Please write what you prefer on the consent form. To make sure no-one can be identified from this study, we will not use your real name when writing, or talking, about your experiences.

Once we have completed our interviews, we will present our preliminary findings at a hui to seek your feedback. You will be invited to this hui, and you can choose whether to come or not at the time. Please let us know on the consent form if you think you might like to come. When the study is finished, we will send a summary of the findings to all participants.

Your information will be kept in a locked cabinet at Auckland University of Technology. The recordings of your interviews will be stored on a computer with a password.

The recordings will be deleted when the study is finished in 2023.

All information will be destroyed after six (6) years.

Can I stop taking part in the study?

If you decide to participate in this study, you can stop at any time during the interview without giving a reason. After the interview, if you decide to take back what you said, please contact Associate Professor Matire Harwood. You can withdraw your data without giving a reason up to 4 weeks after your interview.

What are the benefits of taking part in the study?

Benefits for Others:

Your ideas will help improve access to pre-hospital ambulance care for Māori.

Benefits for the Researcher:

The research will contribute to the Researcher's Master's degree.

What are the risks of taking part in the study?

There should not be any risk to you. You might find the interview tiring, if you are tired, we can take a break. You may find recounting some medical events upsetting, if you do AUT provides Counselling and Mental health support.

AUT Student Counselling and Mental Health is able to offer three free sessions of confidential counselling support for adult participants in an AUT research project. These sessions are only available for issues that have arisen directly as a result of participation in the research and are not for other general counselling needs. To access these services, you will need to:

- drop into our centre at WB203 City Campus, email counselling@aut.ac.nz or call 921 9998.
- let the receptionist know that you are a research participant, and provide the title of my research and my name and contact details as given in this Information Sheet.

You can find out more information about AUT counsellors and counselling on https://www.aut.ac.nz/student-life/student-support/counselling-and-mental-health

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, you can contact Bridget Dicker on +649 526 0527 EXT 8771 or bridget.dicket@stjohn.org.nz

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz* , +649 921 9999 EXT 6038.

Where can I find out more information? Who do I tell if I want to be in the study?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

If you want more information, or if you want to be in the study, please contact:

 0800 2MANAWAFATU or  manawafatu@auckland.ac.nz

Someone from your whānau or a friend can do this for you if you want.

Researcher Contact Details:
Sarah Penney on +649 921 9999 EXT 5587 or sarah.penney@aut.ac.nz

Project Supervisor Contact Details:
Bridget Dicker on +649 526 0527 EXT 8771 or bridget.dicket@stjohn.org.nz

This study sits within the Manwataki:Fatu Fatu programme of research – for more information see https://www.manawafatu.org/test-header/programme/

Approved by the Auckland University of Technology Ethics Committee on 1st November 2021 AUTEC Reference number 21/388

Appendices 5. Consent form

CONSENT FORM
THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Manawataki: Fatu fatu for ACCESS (Māori and Pacific hearts in unison for Achieving Cardiovascular Care in Equity StudieS) - Cultural safety in paramedic practice: Experiences of Māori and whānau.

Project Supervisors: Bridget Dicker, Matire Harwood

Researcher: Sarah Penney

- I have read and understood the information provided about this research project in the Information Sheet dated 7th October 2021. have understood the nature of the research. I have had the opportunity to ask questions and have them answered to my satisfaction.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.

I understand that:

- Findings of the study will be presented at national hui and co-design workshops that I will be informed about. Additionally, results may be presented to other groups, for example at conferences or in a scientific publication and as a dissertation/ thesis. All efforts will be made to respect the anonymity of participants but given the small communities and the networking between participants at research-related workshops, this can't be guaranteed.

- I wish to be informed about future hui and community workshops to discuss the findings of the study with patients / whānau, researchers and other healthcare providers

  - ○ By phone call _____
  - ○ By email _____
  - ○ By text _____
  - ○ Not at all

- I wish to receive the summary of findings (please tick one): Yes No

  - ○ By email _____
  - ○ By postal mail _____

I consent to participate in this study

Name _____

Signature _____ Date _____

This study sits within the Manwataki:Fatu Fatu programme of research – for more information see https://www.manawafatu.org/test-header/programme/

Ethics Approval

Approved by the Auckland University of Technology Ethics Committee on 1st November 2021 AUTEC Reference number 21/388

Appendices 6. Oral consent form

Oral Consent Protocol
THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Manawataki: Fatu fatu for ACCESS (Māori and Pacific hearts in unison for Achieving Cardiovascular Care in Equity StudieS) - Cultural safety in paramedic practice: Experiences of Māori and whānau.

Project Supervisors: Bridget Dicker, Matire Harwood

Researcher: Sarah Penney

The participant joins the videoconference

- Do you agree to my recording your consent to participate?

If they agree, then the record function will be activated, and they will be asked the following:

- Have you read and understood the information provided about this research project in the Information Sheet dated 07/10/2021
- Do you have any questions about the research?
- Do you understand that notes will be taken during the interviews and that the interview will also be audio-recorded and transcribed?
- Do you understand that taking part in this study is voluntary (your choice) and that you may withdraw from the study at any time without being disadvantaged in any way.?
- Do you understand that if you withdraw from the study then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used? However, once the findings have been produced, removal of your data may not be possible.
- Do you understand that findings of the study will be presented at national hui and co-design workshops that I will be informed about. Additionally, results may be presented to other groups, for example at conferences or in a scientific publication and as a dissertation/ thesis. All efforts will be made to

Appendices 7. Transcriber confidentiality agreement

manawataki Fatu Fatu

AUT
TE WĀNANGA ARONUI O TĀMAKI MAKAU RAU

TRANSCRIBER CONFIDENTIALITY AGREEMENT

Project Title: Manawataki Fatu Fatu for Accessing Cardiovascular Care for Equity StudieS (ACCESS) - Cultural safety in paramedic practice: Experiences of Māori and whānau.

Researchers: Sarah Penney, Bridget Dicker, Matire Harwood

Transcriber:

I agree to transcribe the audiotapes for the above research project. I understand that the information contained within them is confidential and must not be disclosed to, or discussed with, anyone other than the researchers.

Name: _____

Signature: _____

Date: _____

Contact Details

For any queries regarding the research study contact:

Sarah Penney

Email: sarah.penney@aut.ac.nz

Phone: 09 921 9999 ext 5587

Department of Paramedicine
Faculty of Health and Environmental Sciences
Auckland University of Technology South
640 Great South Road, Manukau City
Auckland 2025
New Zealand