Kaupapa Māori antenatal wānanga: A solution to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi.

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Abstract

The revitalisation of traditional Māori birthing knowledge and practices is a significant space to enhance Māori maternal and infant health outcomes. This thesis with publications examined the potential of two Kaupapa Māori antenatal wānanga to enhance maternal health outcomes for Māori. Using a mixed methods approach, underpinned by Kaupapa Māori research principles and supported by Māori centred research and a mana wahine theoretical perspective, this thesis reveals transformative solutions to address maternal and infant inequities.

This thesis explores three key areas. First, maternal and infant education and knowledge during hapūtanga (pregnancy). Second, the connection and engagement of Māori māmā hapū (expectant mothers) and whānau (family) with health and community services, and third, the lived experiences of Māori māmā engaging with community services to identify barriers and enablers of service providers.

The introductory chapters provide a contextual overview of maternal and infant health. I begin by canvassing traditional and contemporary factors that influence the current state of Indigenous, notably Māori, maternal and infant health. I then present four chapters that have been submitted to academic journals for publication. Each chapter focuses on one or more of the three key areas identified above. The final chapter draws each of the chapters together to demonstrate how Māori led health initiatives work to enhance and improve maternal health .

Chapter 3 provides a rationale for focusing on Indigenous antenatal education. Within Western countries, antenatal education is a recognised and encouraged service provided during pregnancy. Providing education and information, antenatal education is an opportunity for expectant parents to prepare for pregnancy and parenting. With poor maternal and infant health outcomes, Indigenous Peoples from Aotearoa, Australia, Canada, and the United States, are particularly encouraged to attend antenatal education. Yet, the low rates of Indigenous Peoples attending antenatal education (will be interchangeably referred to as childbirth education throughout this thesis) do not reflect this need. Therefore, the first process in this thesis was to explore Indigenous Peoples participation and engagement in antenatal education. Using a standardised protocol, chapter 3 is a systematic review that explored how Indigenous

Peoples are involved, prioritised, and privileged in antenatal education. Specifically, this systematic review examined the extent to which Indigenous Peoples, and their aspirations of health, were prioritised in academic scholarship. With only two studies involving Indigenous participants, it was evidenced that the voice of Indigenous Peoples in antenatal education is lacking in academic scholarship. A key finding was that Indigenous antenatal education programmes were not reflected in academic scholarship. Yet, within Aotearoa there are existing Kaupapa Māori antenatal education. Therefore, the next chapter (4) focused on a retrospective audit of Hapū Wānanga, a Kaupapa Māori childbirth education class.

One reason for undertaking a retrospective audit of Hapū Wānanga (HW) was because I was genuinely interested to understand how other māmā hapū, and their whānau, experienced the programme. I wanted to give voice to these wāhine and was excited to learn whether the programme had similar value to them, as it did for me when I participated in a similar wānanga. This mixed-method interpretive study used retrospective post-course survey data of 1,152 participants over a three-year period from the HW based in the Waikato District Health Board region. This chapter amplified the experiences and voices of HW participants to affirm positive aspects of the class. Participants regarded the information that was shared as life changing, describing the constituents that separated this programme from other health service experiences. Findings revealed that an Indigenous, strengths-based approach to childbirth education service design and delivery, has positive and transformation results for whānau.

Chapter 5 focused on supporting another Kaupapa Māori antenatal wānanga, Whirihia Te Korowai Aroha, to co-design a holistic assessment tool (Whirihia tool). The Whirihia tool aimed to increase access and enhance experiences between health services and māmā hapū by identifying health or social need, then providing a dedicated referral pathway. Using the Indigenous He Pikinga Waiora Implementation (HPW) framework as a guide, this chapter provides an autoethnographic reflective account of the co-design process that led to the development and implementation of the Whirihia tool. This reflective account provides examples of key considerations that align to the HPW framework in the hopes that it will afford some guidance for fellow emerging researchers who wish to undertake ethical co-designed health research with Māori (and non-Māori) communities and organisations. The intention of this chapter is to encourage our research community to provide opportunities and platforms for community health initiatives such as Whirihia Te Korowai Aroha to be foregrounded in academic scholarship. Kaupapa Māori programmes such as these have the solutions to address issues that predominantly affect Māori, however they need the vehicles and tools to make Māori voices, visibility, and vision, heard.

A cohort study was used to extend on the findings from the autoethnographic co-designed Whirihia tool. This chapter explored the experiences of māmā hapū and their interactions with health and social services immediately after Aotearoa's first Covid-19 lockdown in March 2020. 17 participants completed the Whirihia tool with a subsequent seven māmā participating in a semi-structured, open-ended telephone interview. Findings showed that when services enabled participants to enact their autonomy and self-determination participants valued their engagement with that service. To be responsive to Māori health needs and aspirations, services must demonstrate empathy and compassion for māmā and operate in a passive role of support rather than a position of authority and power.

The final chapter draws together the findings from the previous chapters and challenges preconceived notions that Māori do not engage with maternal and infant health services. Instead, this thesis demonstrates that Māori-led, designed, and delivered, initiatives attract Māori māmā hapū, wider whānau, and non-Māori engagement and endorsement. Foregrounded by the voice and experiences of Māori māmā hapū and their whānau, I suggest three practical steps that can be enacted immediately at both a health system, and health service delivery level to positively enhance antenatal health. First, determine the extent to which CBE classes are meeting Māori end-user needs. Second, using findings from end-user experiences as a foundation, reorient the Ministry of Health pregnancy and parenting service specifications to ensure appropriate content is prioritised in CBE classes, particularly Māori knowledge. Third, adequately resource CBE providers who can deliver programmes that meet the needs of Māori end-users. With the new Te Whatu Ora Health New Zealand and Te Aka Whai Ora Māori Health Authority, now is the time to deliver on the various strategic documents to authentically meet the needs of māmā hapū and whānau.

The evidence-based research delivered in this thesis provided the basis for the three recommended changes noted above. These recommendations can be implemented into the health system to enable positive and meaningful change for Māori, in addition to supporting efforts of other Indigenous Peoples to improve Indigenous perinatal health and wellbeing.

Acknowledgements

“Ehara taku toa i te toa takitahi,

engari, he toa takitini”

“My strength is not the strength of one,

it is the strength of many”

Whanaungatanga centres on relationships, kinship, and a sense of connection. This is my foundation. My strength comes from the people I love, I feel invigorated by old, and new, connections, and I feel inspired by the accomplishments of others. This thesis is an extension of me. It is an entanglement of my past and present experiences, as such I would not be where I am now without the support, guidance, and love of whānau and friends. These next paragraphs were difficult to write because really, how do you genuinely thank so many people in a few sentences?

I would first like to acknowledge the research participants for giving up their time and knowledge to contribute to the important findings of this thesis. I loved catching up with these wahine toa (strong women) sharing their epic birthing stories. I would also like to thank the Hapū Wānanga team at Te Puna Oranga Waikato DHB for entrusting me with to help showcase the amazing work you do.

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Waetford. These people have watched me grow, literally, into the person I am today. I hope to live up to their expectations and continue to pass their legacy onto the next generation.

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Without my husband and whānau, I would not be where I am today. They are the ones celebrating with me when I receive an award. They are cheering me on when I unexpectedly decide to compete in a corporate boxing fight despite my age (and coming second) and they are the ones who got me to the finish line of this thesis.

Thank you to all my whānau and friends.

Pepeha (who I am and where I come from)

Ki te taha o tōku mama	My mothers side
Ko Tainui te waka	Tainui is my canoe
Ko Waikato te awa	Waikato is my river
Ko Maungatautiri te maunga	Maungatatatiri is my mountain
Ko Ngāti Hauā te iwi	Ngāti Haua is my tribe
Ko Te Iti o Hauā te hapū	Te Iti o Hauā is my sub-tribe
Ko Te Iti o Hauā me Rukumoana ngā marae	Te Iti o Hauā and Rukumoana are my family meeting homes
Ko Angeleen (Te Maru) Waetford tōku mama	Angeleen (Te Maru) Waetford is my mother
Ki te taha o tōku papa	My fathers side
Ko Hikurangi te maunga	Hikurangi is my mountain
Ko Te Makatote me Mata ngā awa	Te Makatote and Mata are my rivers
Ko Ngāti Porou te iwi	Ngāti Porou is my tribe
Ko Te Aitanga a Mate te hapū	Te Aitanga a Mate is my sub tribe
Ko Rongohaere te marae	Rongohaere is my family meeting home
Ko Pani Haereroa tōku papa	Pani Haereroa is my father
Ko Nikki Barrett tāku ingoa	My name is Nikki Barrett
Ko Manu Barrett tāku tane	Manu Barrett is my husband
Ko Materoa rawa Angeleen ōku tamariki	Materoa and Angeleen are my children

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Glossary of Māori words and frequently used terms

Māori terms	English translation
Aotearoa	literally “Long White Cloud”; in common usage as the Māori name for New Zealand
hapū	pregnant
hapū	sub-tribe
Hapū Wānanga	a by Māori, for Māori childbirth education class
iwi	tribe
kanohi ki te kanohi	face to face
kaupapa	topic
Kaupapa Māori	a philosophy most often expressed in the delivery of culturally appropriate and relevant services to Māori in the education, health, and welfare sectors. These services are colloquially referred to as “by Māori, for Māori”
koroua	grandfather
kuia	grandmother
mama	mother
māmā	mothers
māmā hapū	expectant mothers
mamae	pain
mana	prestige, status, authority, influence, integrity; honour, respect
mana Māori	Māori control, autonomy, and self-determination
mana motuhake	mana through self-determination and control over one’s own destiny
mana wahine	an emerging theoratical approach distinctive to Māori wahine
Māori	Indigenous Peoples of Aotearoa
marae	Māori meeting house
mātauranga Māori	Māori knowledge
mātauranga-a-whānau	Māori whānau knowledge
matua	parents
motu	land
muka	flax fibre
Pākehā	New Zealanders of European descent
papamahi	fathers role/work
Papatuanuku	earth mother
pēpi	baby
pike	up

pito	umbilical cord
pōwhiri	welcome ceremony
purakau	story telling
Ranganui	sky father
rangatahi	teenagers
rangatahi	teenagers
taha hinengaro	mental
taha tinana	physical
taha wairua	spiritual
taha whānau	family
tamariki	children
tapu	sacred
Te Aka Whai Ora Māori Health Authority	new statutory entity working in partnership with both Ministry of Health and Te Whatu Ora - Health New Zealand
Te Ata	the light
te Ao Māori	Māori world view
te iwi Māori katoa	Māori as a whole
Te Kore	the nothingness
Te Po	the darkness
te reo Māori	Māori language
Te Tiriti o Waitangi	Māori text of Aotearoa's founding document
Te Whare Tapa Whā	Māori model of health referring to the four cornerstones of health- four walls of a house
Te Whatu Ora Health New Zealand	responsible for improving Māori health outcomes and equity through all of its strategic and operational functions at national, regional and local levels.
The Treaty of Waitangi	English text of Aotearoa's founding document
tikanga	values, beliefs, custom, rule, principles
tohunga	Māori healer
tumeke	awesome
tupuna	ancestors
wahakura	woven bassinet for infants
wāhine	woman
wāhine	women
waiata	song
wairua	spirit
wānanga	workshop; a traditional method of Māori knowledge transmission through mutual learning and sharing.

whakamā	shy
whakapapa	genealogy
whakapiki tāngata	enhancement, empowerment, and enablement of a person or people
whakatau	informal Māori welcome
whakatauki	proverbs
whakatuia	integration and interconnectedness
whakawhanaungatanga	a process of introducing and connecting with others, often based on genealogical connections
whānau	family
whare	house
whenua	placenta; land
whenua ki te whenua	returning the placenta to the earth mother Papatūānuku

Chapter 1: Introduction

When the opportunity to begin my PhD journey first presented itself, I was adamant that I was not going to produce a book that would sit on a shelf collecting dust. I wanted to change the world for the better. Quite simply, my dream was (and still is) to make sure all wāhine (women) in Aotearoa New Zealand (thereafter Aotearoa) have a positive birthing experience. My goal was for this thesis to be more than a mere academic venture but contribute to positive transformation for my whānau (family), hapū (sub-tribe), and iwi (tribe), as well as te iwi Māori katoa (Māori as a whole). Like with all worthwhile ambitions, this PhD journey has been full of frustration, tears, and laughter, and although this was primarily an academic exercise, the learnings have helped me grow, as both a Māori māmā (mother) and wahine (woman). I sincerely hope that by the end of this thesis you will not only have a deeper understanding of Māori antenatal education, but knowledge and tools that can support and contribute to positive changes for Indigenous wāhine and their whānau.

I begin this chapter by sharing my experience of why I undertook a PhD specifically in the kaupapa (topic) of antenatal education. I will then expand on the current state of maternal and infant health inequities for Indigenous Peoples, both internationally and within Aotearoa, and present responsive solutions that can positively address these stark inequities.

1.1 My birthing story

When I first found out I was hapū (pregnant) I was overwhelmed with pure joy and absolute terror. Pure joy because my now husband and I were told we could not have children and then were blessed with our little miracle; absolute terror, because there were three things I thought I knew for sure about childbirth.

Firstly, from a very young age I remember my nanny had told me there is no dignity when you give birth. When you're in labour you lie on a hospital bed exposed and naked with your legs spread. Nurses and doctors come in and out of the room at will without asking permission. They do not ask for consent to touch you or look at private areas of your body. 'This is something you must do' my nanny would tell me and most importantly that it was completely normal.

The second thing I thought to be true was that women cannot handle childbirth pain. My father would say women are weak and they need drugs to get through the pain. I remember my nanny also said that there were no such thing as painkillers in her day but had there been she would have taken them in a heartbeat. Prior to conception and during pregnancy I was preparing myself for the fact that I would need an epidural.

And third, all I'd ever heard and seen were women going to a hospital to give birth. Watching movies women would always go to the hospital to birth. They were on their back in a hospital bed, screaming in pain, giving birth. I was born in a hospital, my siblings were born in a hospital, my cousins around my age were all born in a hospital. Growing up I had never heard of anyone being born anywhere but a hospital.

These three ideas stuck with me throughout my life, and I was on a trajectory of giving birth in a hospital, needing pain relief medication, and expecting to be treated with no respect. It wasn't until I happened to be one of the very few, lucky people to find myself in a Kaupapa Māori (Māori philosophy) antenatal wānanga (workshop), that the veil was lifted.

In this class I found out about natural birthing alternatives, that you don't have to go to a hospital, and that my body is geared towards dealing with labour and birthing. But fundamentally, because of this class, my dignity, my mana (integrity) was restored and given its rightful place.

As a result of this class the terror disappeared, and I ended up having two beautiful water births, first with my son Materoa Te Wai Victor Barrett, and second with my daughter Angeleen Ihi Matariki Barrett. It was a process that I can only describe as perfection beyond my wildest dreams of possibility. After my first birth, I remember my nanny, aunties, mother in law, and her mother crying in the waiting area. They were crying because of the wonderful news but they were also reflecting on their traumatic birthing experiences. They had told me how they wished their experience was one of joy and happiness. This mamae (pain) and trauma is still felt through three generations of wāhine in my whānau (possibly more) and though I am glad I had a positive experience; I mourn with my whānau and am angry that they were robbed of such a wonderful experience.

After this, I knew I had an obligation to make sure all wāhine have access to a Kaupapa Māori wānanga like the one I attended, so they might have a positive birthing experience. More than that, I want wāhine and their whānau to feel empowered like I was. To be given relevant, informative, and quality information and education so that they can make choices that align to their whānau aspirations. That is when I began to learn about the extent of the disparities, particularly with Indigenous women, and how I will introduce you to my research study.

1.2 Background

In this chapter I provide a review of literature centred on the following four themes. First, I overview Indigenous Peoples' health inequities and contributing factors. This section provides insight into the current state of Indigenous Peoples' health, specifically those from Aotearoa, Australia, Canada and the United States. Second, an overview of the New Zealand health system and service delivery provides context into the health inequities Māori experience. Third, an overview demonstrating the importance of prioritising maternal and infant health. Finally, an insight into Māori maternal and infant health. This review provides a rationale for my research.

1.3 Factors contributing to Indigenous Peoples' health inequities

Indigenous populations from colonised countries experience significant health disparities compared to their non-Indigenous counterparts (Morrissey, 2003; Bramley et al, 2005; Durey and Thompson, 2012; Kirmayer and Brass, 2016; Ministry of Health, 2019; Young et al, 2020). Reid et al. (2017) explain that Indigenous Peoples dominate negative statistics of settler states, and are significantly more likely to be overrepresented in poor health, education, incarceration, abuse and numerous other areas, "…put simply, indigenous inhabitants typically live well below the median lines in all settler states" (p. 11). Maternal and infant health outcomes is one area where these disparities are regularly experienced and will be discussed in more detail in section 1.6 (Shah et al., 2011; Smylie et al., 2010; Steenkamp et al., 2012).

Indigenous Peoples experience health inequities in several health indicators. A review conducted by Gracey and King (2009) found Indigenous Peoples are overrepresented in health problems such as,

- High infant and young child mortality

> - High maternal morbidity and mortality
> - Heavy infectious disease burdens
> - Malnutrition and retarded growth
> - Shortened life expectancy at birth
> - Diseases and deaths associated with cigarette smoking
> - Social problems, illnesses, and deaths linked to misuse of alcohol and other drugs
> - Accidents, poisonings, interpersonal violence, homicide, and suicide
> - Obesity, diabetes, hypertension, cardiovascular disease, and chronic renal disease (lifestyle diseases)
> - Diseases caused by environmental contamination (eg, by heavy metals, industrial gases, and effluent wastes) and infectious diseases caused by faecal contamination
>
> (p. 66).

Gracey and King (2009) further exclaims that Indigenous Peoples are more susceptible to disease which are "…exacerbated by poor living conditions and water supplies, often with restricted access to fresh and nutritious food, and inadequate health services" (p. 65).

Whitehead (1991) defines health inequities as "differences which are unnecessary and avoidable, but in addition are considered unfair and unjust" (p. 222). Some studies have used the term inequality interchangeably, or in place of inequities (Craig et al., 2008; Tobias et al., 2009). However, within Blakely et al's (2011) study titled, 'Social inequalities or inequities in cancer incidence? Repeated census-cancer cohort studies, New Zealand 1981–1986 to 2001–2004', the authors differentiate between inequities that are 'unnecessary' and 'unjust', with inequalities. Reid and Robson (2007) concur and explain that health inequalities are 'differences', whereas inequities are 'unfair'. This key point of difference means that with equity distribution of resources is based on ensuring everyone has at least their minimum needs and does not necessarily mean resources are equally shared (Reid & Robson, 2007). Health equity focuses on systematic disparities rather than individual heath, monitoring the distribution of health resources (Braveman & Gruskin, 2003). This is a key issue that will be discussed throughout this thesis.

The social determinants of health have received considerable attention in academia and communities in the last two decades (Braveman & Gottlieb, 2014). Marmot and Wilkinson (2005) explain that to understand the causes of differences in life expectancy and quality of life, "…and more importantly, to do something about them, requires focus on the social determinants of health" (p. 1). The determinants of health are a widely accepted set of factors that influence health equity. Toi Te Ora Public Health (2019) define the determinants of health as;

> the circumstances in which people are born, grow up, live, learn, work and age. They are also the wider set of forces and systems affecting these circumstances, for example, economic and development policies, geographic and climatic environments, social norms, social policies and political systems.
>
> (p. 1).

As Indigenous Peoples, more specially Māori, are at higher risk of morbidity, mortality, and shorter life expectancy than their non-Māori counterparts (Walsh & Grey, 2019), it is not just an ethical responsibility but an obligation of Te Tiriti o Waitangi (the Māori text of Aotearoa's founding document) that academics and health professionals not only investigate the causes of these problems, but actively work toward responsive and appropriate solutions. Understanding the factors that contribute to health inequities is necessary to address root causes of health problems (Reid & Robson, 2007; Signal et al., 2007).

This next section explores some key contributing factors that impact Indigenous populations, specifically those from Aotearoa, Australia, Canada and the United States.

1.3.1 Colonisation

Indigenous Peoples of the four countries highlighted above have, and continue to, experience negative health impacts as a direct result of colonisation (Bourassa et al., 2004; Lavallee & Poole, 2010; Reading & Wien, 2009). The establishment of colonial governments was an intentional way of legitimising that Indigenous Peoples were a separate and inferior race (Smedley & Smedley, 2018). Colonisation and assimilation of Indigenous Peoples into Western society impacted all aspects of Indigenous life, including health, traditional roles, culture, and socio-economic conditions, to name a few (MacDonald & Steenbeek, 2015; Reid et al., 2017; Reid et al., 2019).

In Australia, the settler inclusion in the 1700s meant that early Aboriginal groups were subjected to "…widespread dispossession, violence, and introduced diseases…Europeans took up large areas of country and forced Aboriginal communities onto missions and reserves" (Adams et al., 2018, p. 82). The introduction of Western diseases, such as smallpox, contributed to the dramatic decline in the Aboriginal population (McCalman & Smith, 2016). Aboriginal communities were also forcibly relocated to missions and reserves, and subjected to intense pressure to give up cultural practices (McGrath, 2020).

The Truth and Reconciliation Commission of Canada (2015) released a summary report outlining the traumatic accounts of the past, and impacts of these events on present day, and future Indigenous Peoples of Canada.

> For over a century, the central goals of Canada's Aboriginal policy were to eliminate Aboriginal governments; ignore Aboriginal rights; terminate the Treaties; and, through a process of assimilation, cause Aboriginal peoples to cease to exist as distinct legal, social, cultural, religious, and racial entities in Canada.

(Truth and Reconciliation Commission of Canada, 2015, p. 1).

Evans-Campbell (2008) focused on the impacts of historical trauma for American Indian and Alaska Native (AIAN) peoples, and provides reference to an extensive scope of literature on the assaults AIAN were subjected to because of colonisation. These include "…community massacres, genocidal policies, pandemics from the introduction of new diseases, forced relocation, forced removal of children though Indian boarding school policies, and prohibition of spiritual and cultural practices" (Evans-Campbell, 2008, p. 316).

Native Hawaiians of the United States also endured similar circumstances, with the introduction of Western processes leading to the demise of their way of life.

> In a brief hundred years [following the arrival of British explore James Cook] Native Hawaiians suffered the loss of their lands, the destruction of their social and religious systems, and a savage decline which can only be termed as genocide.
>
> (Trask, 1983, p. 1-2).

Like Australia, Canada, and the United States, Māori (the Indigenous Peoples of Aotearoa) endured similar practices and these will be explored further in the subsequent section. Ultimately, colonisation sought to intentionally destroy Indigenous Peoples. The accounts highlighted above amount to a history of ethnic and cultural genocide (Pihama et al, 2017).

Still, despite the loss of traditional practices, breakdown of the family unit and wider societal structures, and challenges to traditional knowledge systems (King et al., 2009); these Indigenous Peoples have shown adversity, resilience and resistance. Professor Linda Tuhiwai Smith is one of many Indigenous leaders challenging the dominant discourses set forth by Western knowledge systems, and relentlessly advocating for the validity of Indigenous knowledge. Though there has been much headway, such as the United Nations General Assembly's (2007) 'Declaration on the Rights of Indigenous Peoples', there are still significant disparities between the Indigenous Peoples of these four countries, and their dominant counterparts. To move forward it is crucial to address past injustices. As Reid et al. (2017) emphasise, historical events play a huge role in creating, and continuing, a colonising environment.

1.3.2 Colonial history of Aotearoa New Zealand

In Aotearoa, colonisation is a controversial topic producing starkly contrasting views regarding accountability and responsibility for past, and current, indiscretions between the two most pronounced population groups, Māori (Indigenous) and Pākehā (European New Zealanders) settlers. An array of scholars have researched the effects of colonisation in a range of areas, such as housing, education, health, and employment (Robson et al., 2007). Dame Tariana Turia former co-chair of the political party, 'Māori party', and prominent ambassador for Māori rights, explains that New Zealand can no longer simply acknowledge the effects of colonisation but must "peel back the layers of truth and address them" (Turia, 2002, p. 1). Though this statement was said two decades ago, Māori are still having to justify and challenge the long-lasting effects of colonisation.

This is one reason why colonisation is a necessary topic to cover in relation to health research, system decision-making, and service delivery, involving Māori. Considering the points noted above, I now provide a brief overview of the impact of colonisation on Māori, and then highlight how colonisation is still significant and relevant in Aotearoa society.

The signing of the nation's founding document The Treaty of Waitangi/Te Tiriti o Waitangi (hereafter referred to as Te Tiriti o Waitangi) on 6th February 1840 was a momentous occasion in Aotearoa's history. Although the effects of colonisation began before this date, for the purposes of this thesis I will focus on the effects of colonisation rather than the specific details of when events took place.

In the years leading up to, and immediately following the signing of Te Tiriti o Waitangi, the Māori population declined rapidly (Durie, 1998b). Similar to the factors noted in the previous section, factors that contributed to Māori population decline included, confiscation of Māori lands and resources, introduction of Western diseases, warfare, starvation, and the implementation of racist legislation (Durie, 1998a; Murphy, 2013). Pool (1991) explains that the Māori population declined so severely that it was widely assumed Māori were headed for extinction and colonisers had little need to focus on stopping this decline as they believed Māori were simply, "being supplanted by a superior race" (Pool, 1991, p. 67). As a result of this widely held belief, there was little focus on Māori health pre-1900 or any perceived need to improve Māori mortality rates. As Lange (1972) explains "at no stage before 1900 did the government see a need for official action against low standards of Māori health" (p. 82). Dow (1999) reports that colonisers during that period believed they were not at fault for the state of Māori health, but rather, that Māori themselves were to blame for their shortcomings, a belief still held by some today. "Māori were blamed for high rates of illness against imported infection due to their 'lack of attention to sanitation' and 'absurd methods of cure'" (p. 215).

An example of how this mindset dominated New Zealand culture, was the neglected treatment of Te Tiriti o Waitangi in the years after the signing. Although now it is widely accepted as the nation's founding document this was not always the case. As

Bell (2006) explains, "at its lowest point the Treaty was declared 'a legal nullity' by Judge Prendergast in 1877…and it was so ignored and neglected throughout the latter half of the nineteenth century that when it was 'rediscovered' in 1908 it was 'in damaged condition presumably rat eaten" (p. 257). This shows that for a significant portion of New Zealand's history, Māori rights were neglected and ignored.

It was not until many years post Te Tiriti o Waitangi signing, Māori health was officially recognised as 'important' (Dow, 1999). This was confirmed by Dow (1999) who noted that Raeburn Lange was the first academic historian to tackle Māori health in 1972 (p. 216). Although a ground-breaking topic, it reflects the lack of value New Zealand society had for Māori. Despite bringing Māori health to the forefront of research, Māori health continued to be overlooked well into the late-twentieth century, meaning a large period of postcolonial New Zealand history is either undocumented or distorted (Dow, 1999).

1.3.3 Present day impact of colonisation

Te Tiriti o Waitangi is now seen as an "ongoing social contract" (Byrnes & Ritter, 2008, p. 67). Bell (2006) states the ongoing significance of the document and what it means for New Zealand. "New Zealand is thus understood as having two equally valid and, ideally, legally equal cultures- Maori and Pakeha" (p. 257). In saying that, the reality is Māori are not of equal status and remain disadvantaged across a range of indicators. Bell (2006) goes further to say that "recognition given to the Treaty partnership over the last three decades has yet to deliver much substantive equality" (p. 257).

Several influential scholars have identified that colonisation and Māori health are still intrinsically linked (Pihama et al., 2017; Reid et al., 2017; Reid & Robson, 2007). "It is impossible to understand Māori health status or intervene to improve it without understanding our colonial history" (Reid & Robson, 2007, p. 4). Colonisation had, and still has, a severely negative impact on the health and wellbeing of Māori (Robson et al., 2007). J. Reid et al.'s (2017) report expands further to explain how colonisation is still relevant with their study aiming to "help explain the trauma of colonisation, its causes and the mechanisms which continue to perpetuate that trauma" (p. 9). Traumatic experiences are exacerbated by the effects of historical trauma passed from generation to generation. For instance, land confiscation and displacement occurred in the 19th and 20th centuries, yet the consequences of those actions are still affecting Māori today, with more than 70% of Māori not experiencing home ownership (Statistics New Zealand, 2016). The report investigates "connections between historical events many decades and centuries ago and contemporary experiences" (Reid et al., 2017, p. 11).

Health is a priority for the New Zealand government and the relationship between research, policy, and practice is valued (Campbell et al., 2009). "It is crucial for those working in the health system in New Zealand to understand the health inequities Māori face in order to improve the negative health statistics and remove the health inequities this population faces to save Indigenous lives" (Harding, 2021, p. 4). The New Zealand Health Research Strategy 2017-2027 is a document that indicates the New Zealand government is invested in research to influence and drive policy and legislation.

> This first New Zealand Health Research Strategy brings together science, health, research and innovation to form a more cohesive system that will have the greatest impact on the lives of New Zealanders… Dedicated investment in health research in New Zealand gives us the capacity we need to generate innovative ideas, tap into global science and effectively translate research findings into policy and practice in the health, disability, social and science sectors.

(Ministry of Business Innovation and Employment & Ministry of Health, 2017, p. 1).

Although this is a new and exciting opportunity with great potential, given past failures from the Crown, ongoing battles Māori face regarding Te Tiriti o Waitangi claims, and the flow on effects of colonisation, Māori should be sceptical as to how this research strategy will be beneficial for Māori, and question how Māori will be involved in all decision-making processes.

1.3.4 Discourse of ethnic inequities in health

Access, or rather lack of access to health services, has been researched both internationally and in Aotearoa, but only recently has the discourse of ethnic inequities emerged. In what follows I address some of the obstacles Māori experience which confirm that current systems and structures continue to increase the gap between Māori and non-Māori health outcomes.

Ethnic inequities in health are due to, 1) differential access to the determinants of health or exposures leading to differences in disease incidence, 2) differential access to health care and, 3) differences in the quality of care received (Jones, 2001).

Differential access to the determinants of health or exposures leading to differences in disease incidence

As signalled earlier, the determinants of health play an integral role in an individual's health. Houkamau et al. (2016) explain that factors such as "neighbourhood deprivation, income, employment status, housing, education all have a role to play in individual health and behaviour" (p. 57). The World Health Organization (2023) elaborates on these factors to include, "food insecurity…social inclusion and non-discrimination, structural conflict and access to affordable health services of decent quality" (para. 2). Māori are disproportionately represented on the lower scale of many of the factors noted above. As the Ministry of Health (2018c) state:

> In 2013, non-Māori were more advantaged than Māori across all socioeconomic indicators... Māori adults had lower rates of school completion and much higher rates of unemployment. More Māori adults had personal income less than $10,000, and more Māori adults received income support. Māori were more likely to live in households without any telecommunications (including internet access) and without motor vehicle access. More Māori lived in rented accommodation and lived in crowded households.
> (p. 1)

These alarming statistics show that Māori are more susceptible to poorer health outcomes due to accumulative factors that increase chances of disease exposure. These exposures are more likely to involve Māori as Māori are three times more likely than non-Māori to reside in the highest deprivation areas (Ministry of Health, 2018a).

While a full detailing of Māori and Pakeha inequities across all the core determinants is beyond scope, another socio-economic factor that goes hand in hand with areas of high deprivation is poor, inadequate housing. Until recently the health impacts of poor housing have been overlooked by many New Zealand Governmental departments. Howden-Chapman et al. (2012) found that the "[sic] average indoor temperatures [in New Zealand rental properties] are cold by international standards and occupants regularly report they are cold, because they cannot afford to heat their houses" (p. 134). There is now substantial research that shows a direct correlation between poor health and housing, with Howden-Chapman (2004) explaining that "children seem to be particularly vulnerable to prolonged exposure to poor housing" (p. 163). Ingham et al. (2019) provide a specific example of this, investigating the impact of New Zealand housing quality, specifically dampness and mould, and hospitalisation for acute respiratory infection (ARI) among children. Their findings "predict that 19% of ARI admissions for children under 2 years old would be prevented if all housing were free from damp and mould. This represents savings in costs solely due to hospitalisation … of just under $8million NZD" (Ingham et al., 2019, p. 856).

On the extreme end of the scale, cold, damp homes can be linked to child mortality such as the tragic death of an Auckland toddler, where "the coroner linked her death to her cold, damp state home" (Broughton, 2019 p. 1). As a response to events such as these, the consequences of non-Governmental involvement, and the anticipated benefits of warm, dry homes, the Labour-led government introduced the Residential Tenancies (Healthy Homes Standards) Regulations 2019 to address the lack of poor housing regulation in New Zealand rental properties (Parliamentary Counsel Office, 2019). The introduction of this Act has meant that landlords must provide a minimum standard of care in five priority areas, heating, insulation, ventilation, moisture and drainage, and draught stopping (Ministry of Business Innovation and Employment, 2019).

The Residential Tenancies (Healthy Homes Standards) Regulations Act 2019 particularly impacts Māori, and although a promising move to improve health outcomes, renters have voiced concerns that this Act could result in a strained relationship between themselves and their landlord. In a newspaper article by The Southern Initiative (2018) renters reported that they were worried about speaking out against their landlord (if the landlord does not adhere to the Act legislation) for fear of rent rise, or worse, eviction. Statistics New Zealand (2013) data shows that "for people identifying as Māori living in households in New Zealand on 5 March 2013: 53.3 percent (293,178 people) were living in households in rental accommodation, compared with [sic] 32.9 percent for the total New Zealand population" (p. 1). Statistics New Zealand (2013) goes further to state that of the 53.3 percent of Māori living in a rental property, 76.6 percent of those are in a private rental property. These figures are significant as it means that most Māori, have little to no control or influence over house maintenance.

Housing is one such example of a determinant of health that can result in poor health outcomes, yet it cannot be attributed solely to the individual being at fault. Although the recent introduction of this legislation hopes to improve health conditions, many Māori have been exposed to cold, damp housing for generations, a combination of factors out of an individual's control. Still, "commonplace explanations of these and other inequities overtly and subtly blame Māori for this state of affairs … without necessarily considering the wider context in which health and other issues are embedded" (McCreanor & Nairn, 2002, p. 510).

In addition to the determinants of health noted above, scholars Loppie et al (2009) categorise the following influences into three distinct determinants. First, distal which includes factors such as historic, political, social and economic contexts. Second, intermediate such as community infrastructure, resources, systems and capacities. Finally, proximal which includes health behaviours, physical and social environment. Loppie and Wien (2008) stress that;

> unfavourable distal, intermediate and proximal determinants of health are associated with increased stress though lack of control, diminished immunity and resiliency to disease and social problems, as well as decreased capacity to address ill health. The complex interaction between various determinants appears to create a trajectory of health for individuals that must be addressed through a social determinants approach.

p. 24.

Smylie and Firestone (2016) share similar sentiments and agree that while determinants of health affect Indigenous populations, there are key Indigenous specific determinants of health such as colonisation, racism, and self-determination.

Differential access to care

Access to health care has been thoroughly researched in New Zealand with a number of factors identified that contribute to challenges for Māori accessing health care. Health determinants, as discussed in the previous section, is one factor that is a barrier for Māori accessing care, for example residing in a low socio-economic area. The National Advisory Committee on Health and Disability (1998) suggest a solution to address this barrier is that areas of low socio-economic status should be prioritised to receive publicly-funded primary and preventive care services. Along with receiving services, there are a number of funding allowances available targeting priority groups. Yet Lawton et al. (2013) found that,

> Māori are less likely to receive benefits such as a disability allowance that helps with costs involved with doctors, hospital entitlements, medicines, extra clothing and special food or travel …[and] Māori children miss out on at least $5.8 million of potential assistance per annum.

(p. 251).

Although there may in theory be services available to support vulnerable families, access to receiving these services or care is a barrier.

Another barrier to accessing care is rurality. The Ministry of Health (2018b) have stated that "one in four New Zealanders live in rural areas or small towns, and there is a greater percentage of children, older people, and Māori living in these areas" (p. 1). The Health and Disability System Review (2020) states that "people living in rural towns can have poorer health outcomes, including lower life expectancy, than people living in cities or surrounding rural areas, an effect that is accentuated for rural Māori" (p. 21). This is a significant barrier for Māori as many health care providers such as hospitals and General Practice clinics are located in urban areas. This means the selection and availability of health care in rural areas is limited and it impacts on Māori accessing health care. Similar to Aotearoa, rural areas in Canada have health services tend to be centred in non-Indigenous settlements (Smylie et al, 2022). Location not only affects access but also the availability of services, with many operating during the working day which is typically Monday to Friday 9am to 5pm. After hours care is generally harder to access due to extra cost, with only certain providers offering care after hours (Ward et al., 2015).

As touched on above, cost is another barrier for Māori (Ellison-Loschmann & Pearce, 2006). The costs associated with attending an appointment can comprise of multiple factors, transport to and from the appointment, the cost of the appointment, prescriptions needed, childcare costs for someone to watch the children while the caregiver attends the appointment, or cost of time off work especially if they have no sick days. All of these factors can become a barrier for someone accessing health care. A number of these factors intersect and impact on accessing services such as "people's lack of knowledge about services, lack of transportation, and service characteristics (e.g., inconvenient opening hours, lack of Māori staff, inhospitality)" (Cram, 2014, p. 15).

Whānau is a major component of Māori culture. A whānau crises can deprioritise health care for an individual as the needs of the whānau in most instances outweigh the needs of an individual (Cram, 2014). This can especially impact access to health care for Māori as they will prioritise the whānau need ahead of their own, which from a Te Ao Māori (Māori world view) perspective optimises health.

The barriers identified above impact a significant portion of the Māori population. As highlighted earlier, a high proportion of Māori live rurally and have less income which can impact on factors such as housing, transport, childcare, or work, in turn making access to care harder for Māori to navigate.

Differences in the quality of care received

There is significant research that suggests Māori receive a poorer quality of health care than non-Māori (Betancourt et al., 2014; Cram, 2014; Jansen & Smith, 2006; Marrone, 2007; Robson et al., 2007). A number of elements can be linked to differences in the quality of care received, one being the direct discrimination experienced by Māori. Ellison-Loschmann and Pearce (2006) for instance explain that "Maoris are less likely to be referred for surgical care and specialist services" (p. 614). Lawton et al. (2013) argues that Māori are ostracised by existing systems, "Māori have less access to, or lower quality of, lifesaving and other treatments" (p. 261). Jansen and Smith (2006) also support the view that Māori experience a poorer quality of care than non-Māori, "referrals were less common for Maori patients [and] follow-up visits within three months were recommended for Maori at lower rates (54.6% vs 57.5%)" (p. 298).

Communication is also identified as a factor in quality of care received. Jansen and Smith (2006) note that "patient satisfaction and effectiveness in primary health care is from the communication skills of the provider" (p. 299). In other words, poor communication results in a poor experience and impacts on patients following the instructions delivered by the service and/or reengaging with the service. Ward et al. (2015) also stress the importance of communication especially when whānau need to engage with numerous services and multi-agencies. Yet, Māori experience a low quality of care in this area with Māori less likely to be referred on to services, and not receiving the care they are entitled to by the Health and Disability Act 2000.

1.3.5 Racism

Racism is a key contributor to negative health outcomes, impacting all three areas of ethnic inequities in health. As Bhopal (2006) explains "Racism can cause death and despair in ways that are, with the exception of disease epidemics, almost unparalleled in human history…" (p. 1059). Understanding and addressing racism is imperative to achieve significant indigenous health improvements.

Jones (2001) explains that there are three levels of racism, "institutionalized, personally mediated, and internalized, each of which can have an impact on health" (p. 300). Indigenous Peoples, specifically Māori, experience racism at all three of the levels. The Indigenous Health Working Group of the College of Family Physicians of Canada and Indigenous Physicians Association of Canada (2016) provide a concise overview of the health and health care implications of racism, highlighting that the effects of racism are "…pervasive in Indigenous communities" (p. 3).

Personally mediated

Personally mediated racism is defined as "prejudice and discrimination, where prejudice is differential assumptions about the abilities, motives, and intents of others by race, and discrimination is differential actions toward others by race" (Jones, 2001, p. 300). Whānau may experience personally mediated racism by health workers, resulting in possible delays or non-engagement with services. For instance, "The Maori Asthma Review reported that conscious or unconscious attitudes of health workers contribute to a reluctance by Maoris to seek medical care for their asthma until it is absolutely necessary" (Ellison-Loschmann & Pearce, 2006, p. 614).

Racism does not have to be an obvious act. It can be enacted whether the instigator is aware of it or not, but the outcome is still harmful for the recipient. Houkamau et al. (2016) explains that Māori experience stigma, stereotyping as well as institutional and interpersonal discrimination. As a result of these experiences, Māori present late or not at all to health services. Cram et al. (2003) expands further on the reasons why Māori do not engage with services;

> Maori [sic] report perceptions of Pakeha healthcare that are the legacy of past negative interactions between Maori clients and Pakeha health professionals. These perceptions include suspicions about treatment, the reluctance to even engage in an interaction with health professionals, and behaviour referred to in the sociological literature as resistance. Such actions have been interpreted by some as evidence of whakamaa, the notion of culturally appropriate shame or shyness. The actions may also be part of a more general reaction to being treated in a patronising or paternalistic way.
> (p. 1)

One example highlighted above for Māori non-engagement is that Māori are whakamaa (shy). Yet as noted above, Cram et al. (2003) informs us that although 'whakamaa' has been a typical response for Māori non-engagement in many studies, it is sometimes used as an excuse for services to shift blame from their incompetence, to the fault of the individual. In some instances, it has been easier for whānau to simply respond with 'whakamaa' as a reason for non-engagement than go into depth with the person interviewing them (whether it be a researcher or health service representative).

As highlighted above, using 'whakamaa' as a reason for non-engagement is a favourable outcome for researchers and health services as it puts the burden of non-engagement on the individual/whānau making it an individual issue not a service issue. One reason health services would rather blame the individual for non-engagement is because it is far more straightforward than putting time, effort and money into changing the way providers deliver services.

Institutional racism

Institutional or structural racism involves the "…differential access to the goods, services, and opportunities of society by race… It is structural, having been codified in our institutions of custom, practice, and law so there need not be an identifiable perpetrator" (Jones, 2001, p. 300). Research by Reid and Robson (2007) explains the structural concept of health equity, which involves monitoring the distribution of resources to communities, including the processes that determine resource allocation. This concept then takes attention away from the individual and his/her health. Systematic racism is severely undervalued by the New Zealand health system as a cause for poor Māori health outcomes. Instead, "the focus on Māori as 'the problem' ensures that the outcomes of non-Māori are never closely examined and Pākehā privilege never exposed" (Reid & Robson, 2007, p. 5).

Berghan et al. (2017) explains, "institutional racism is systemic in public health sector administration, built on a legacy of mono-cultural colonial policies and practices" (p.30). This form of racism requires addressing if fundamental and positive change in Māori health outcomes is to occur. Addressing anti-racism to achieve health equity, requires a multiple co-ordinated approach that reflects a system change approach (Berghan et al., 2017). To achieve that, the colonial history to which current systems and processes were founded on, must be examined. Therefore, racism cannot be addressed without understanding the continuing impacts of colonisation.

Internalised racism

When referring to racism, personally mediated and institutional racism are frequent examples within academia, amongst health professionals, and wider society. However, as David et al. (2019) explain, "fewer people seem to be aware that racism also exists and operates *within* people" (p. 1059). Internalised racism exists and operates at the internalised level (David et al., 2019; Jones, 2001).

Internalised racism is the acceptance by members of Indigenous communities of;

> …negative messages about their own abilities and intrinsic worth. It involves accepting limitations to one's own full humanity, including one's spectrum of dreams, one's right to self-determination, and one's range of allowable self-expression. It

> manifests as an embracing of "whiteness," self-devaluation, and resignation, helplessness, and hopelessness.
>
> (Jones, 2001, p. 300).

Internalised racism is especially damaging for Indigenous Peoples who are subjected to racist stereotypes and ideologies, which results in "…feelings of self-doubt, disgust, and disrespect for one's race and/or oneself" (Pyke, 2010, p. 553). The negative Māori stereotypes portrayed in the media, for instance, fuel a 'culture of blame' and discrimination, severely impacting those identifying as Māori. As Te Pou o Te Whakaaro Nui (2009) explain, "once populations have been identified as "other" or "different", they are often collectively and individually subjected to labelling, negative stereotyping, prejudices, isolation, ridicule, loss of status, loss of dignity and in some instances, loss of basic human rights" (pp. 5-6). Te Pou o Te Whakaaro Nui (2009) and Peterson et al. (2008) further highlight that these examples of discrimination can not only come from people working in services, and the public or broader society, but from whānau and loved ones. Postcolonial scholars such as Albert Memmi and Paolo Freire argue that internalised racial oppression can lead to the subjected group believing messages of inferiority about one's ethnic group, a desire to distance oneself from their ethnic group, and/or reproduce messages of inferiority (David et al., 2019). These factors affect all areas of Māori health and as highlighted above, mainstream New Zealand media perpetuate these ideologies.

Mainstream media has a long history of actively showcasing negative Māori stereotypes. For example, a recent newspaper publication entitled, 'Cunning, deceitful savages': 200 years of Māori bad press' (Matthews, 2018, June 3) reveals a 200 year span of damaging, destructive, and now normalised stereotypes of Māori. The following example a morning television show, The AM Show (2019), pushes an agenda of white privilege by facilitating a leading questionnaire poll asking the New Zealand public "Should the Government apologise to Māori for historic health inequities?". A clear intention to undermine, minimise and trivialise past, current, and potential future health challenges distinctive to Māori. The comments thread from the New Zealand public regarding the AM Show poll, made judgements focused heavily on Māori shortcomings, or suggested that enough money has been 'given' to Māori and therefore nothing else should be done to address existing health inequities. Below are some of these comments;

> Heather White- It’s time Maori took responsibility for their health and education stop blaming the past they have been [given] so much moneys over the year so why don’t their iwis spend it on their people the government needs to stop giving them money handouts to stop!
> Joyce Marie Lorigan- They should not as most problems are caused by our own lifestyle
> Paul Gray- No nothing to do with our generation, when do you stop apologizing now or in 1000 years or 10000000000 years. It was done, we know it happened. Weve payed enough now, get on with life. We dont force them to have a bad diet.
> June Bartlett No, because any "health inequalities" are of our own making. It's called taking personal responsibility for ourselves.

(The AM Show, 2019, p. 1)

The need for appropriate and responsive research in this field is urgent as the consequence of these stereotypes, shared by a large portion of the New Zealand population, continue to marginalise, and traumatise Māori, directly impacting Māori health. The media play an integral role spreading this sentiment.

Turia (2002) for instance, questions how traumatised Pākehā children would be if Pākehā were as negatively critiqued and criticised by the media. Turia (2002) challenges the media as to what headline a failed Pākehā business would receive compared to a failed Māori business. The question posed by Turia (2002) is valid especially from the perspective of Indigenous Māori who constantly endure negative sentiments. They are damaging and destructive. Moreover, comments from the AM poll thread outlined above, demonstrate a lack of understanding of what inequities are, how they affect vulnerable population groups, and contribute directly to poor health outcomes.

1.4 New Zealand Health System and Service Delivery

1.4.1 New Zealand Health System Structure

The New Zealand health system provides free universal care for citizens and eligible permanent residents (Ministry of Health, 2022). "The Ministry of Health is the chief steward of the health system, leading health across government. The Ministry sets direction and policy for the health system, advises the Government on funding and system settings, regulates the health system, and monitors health outcomes" (Ministry of Health, 2022, p. para 1).

Prior to 1st July 2022, the New Zealand health system consisted of 20 District Health Boards (DHB) responsible for the commission and delivery of health services for that geographical area. Research activities carried out in this thesis took place during this period.

As of the 1st July 2022, the New Zealand health system undertook an overhaul amalgamating what once was known as DHBs, shared services and large parts of the Ministry of Health into one system- Te Whatu Ora Health New Zealand (the weaving of wellness). As equal Treaty partners, alongside Te Whatu Ora Health New Zealand, Te Aka Whai Ora Māori Health Authority was launched. "Te Aka Whai Ora - Māori Health Authority is an equal partner at the heart of our new health system. "Working together with Te Whatu Ora - Health New Zealand and the Ministry of Health, for the first time in history we're building an organisation that puts a Te Tiriti lens on the delivery of all health services for Māori" (Te Aka Whai Ora Māori Health Authority, 2022, p. para 1). The establishment of these two entities, specifically Te Aka Whai Ora Māori Health Authority, demonstrates a profound commitment to achieving health equity for Māori. However, as outlined below, it is still important that we as Māori do not get complacent and continue to hold our Treaty partners to account.

In 2016 The Minister of Health refreshed The New Zealand Health Strategy 2016 (NZHS) acknowledging the need for a commitment to improving Māori health, "…given the poorer health experienced by Māori." (Minister of Health, 2016, p. iii). Although there was an acknowledgement of the state of Māori health, Māori still experience inequities to obtaining and maintaining optimum health and well-being. The NZHS was an opportunity for the Ministry of Health to address the equity gap between Māori and non-Māori. However Came et al. (2016) stressed that to address equity, “efforts need to be sustained, systematic and multi-levelled to be successful” (p. 75). The authors found that, “the NZHS ignores this evidence and instead relies on the isolated efforts of committed individuals and organisations rather than addressing equity from a planned, systems viewpoint” (Came et al., 2016, p. 75).

From a strategic perspective, the new restructure of the New Zealand health system is beginning to provide structural support and commitment to address Māori health inequities. However, past learnings demonstrate a lack of accountability and inappropriate implementation of these strategic goals (Harding & Oetzel, 2019; Harding et al., 2021). Although it is still early days for the newly established Te Aka Whai Ora Māori Health Authority and Te Whatu Ora Health New Zealand, I hope the findings from this thesis will contribute toward policy and implementation of key initiatives to support Māori maternal and infant health flourish.

1.4.2 Holistic, whānau-centred, and Indigenous and Māori approaches to health service delivery

Within Aotearoa programmes and research activities aimed to improve health outcomes have been largely focused on non-Māori, rather than Māori, understandings of health, a situation shared with other Indigenous populations (King et al., 2009). Within many Indigenous cultures health and wellbeing goes beyond a Western notion of health as a predominates biomedical matter, and suggest that health is more than the mere absence of illness or disease (Boddington & Räisänen, 2009). Holistic models of health particularly resonate with Indigenous Peoples.

In Aotearoa, Sir Mason Durie is an exceptional Māori academic and a highly regarded leader in public and Indigenous health, wellbeing, and education. For well over three decades, Sir Mason Durie has stressed the importance of a Māori health perspective and has created the following health model- Te Whare Tapa Whā (Durie, 1998b) and health promotion model- Te Pae Māhutonga (Durie, 1999). These models provide non-Māori clinicians with an understanding of health, and health promotion, from a Te Ao Māori perspective.

Te Whare Tapa Whā is a health model that aligns to other Indigenous Peoples, holistic concept of health. Te Whare Tapa Whā (four walls of a house) refers to the four cornerstones of health, with the four realms being; taha wairua (spiritual); taha tinana (physical), taha hinengaro (mental), and taha whānau (family) (Purdy, 2020). These four walls represent a whare (house) and if one wall is off balance, the entire house is impacted (Durie, 1985). King et al. (2009) reiterates that these characteristics intersect with other Indigenous Peoples understandings of health and wellbeing. Further, King et al. (2009) explains that holistic models of health are privileged amongst Indigenous populations, and that all elements are intricately woven together and interact to support a strong and healthy person. Holistic, whānau-centred care approaches have been integral to Māori conceptualisations of health and wellbeing (King & Turia, 2002).

In contrast to Western notions of health, Te Ao Māori (Māori world view) approaches encompass a wider view of health and wellbeing. Despite validity within Te Ao Māori, approaches have not always been accepted in health system design. For instance, Caccioppoli (2005) reported there is still a dominant opinion within the health sector that some practices or holistic approaches are absurd or have no place in practice because they incorporate cultural values. Davidson-Rada (1999) also highlights that "traditional health promotion programmes have been effective for non-Māori but have had relatively little impact upon Māori and Pacific population" (p. 298).Moreover, recent government documents such as the 'New Zealand Health Strategy: Future direction', affords no mention of 'wairua', 'spirituality', or 'Māori cultural practices' within the document (Minister of Health, 2016).

Studies have found that culturally inappropriate health services can have significant health consequences for minority or marginalised groups in society (Kirkham et al., 2017; Memon et al., 2016; Zambas & Wright, 2016). Given the lack of acknowledgement in strategic government documents noted above, culture remains an element which receives either little or no equal value compared to Western medicine and practices.

Fundamental to Te Ao Māori are three concepts central to Māori childrearing, whakapapa (genealogy), creation story, and whānau, hapū and iwi. These concepts have been severely overlooked by past—and many current—health initiatives.

At the core of Te Ao Māori is whakapapa, involving the inter-relationships between generations (Durie, 1998; Jenkins & Harte, 2011; Moewaka Barnes et al., 2013; Rimene et al., 1998). Mahuika (2019) explains how, "the importance of whakapapa in the Māori world is paramount because it is considered crucial to assertions of Māori identity and tribal membership" (p. 1). Rameka (2021) describes whakapapa being fundamental to Māori ways of knowing and importantly, what it means to be Māori.

Connected to whakapapa is the creation story[1] beginning with Te Kore (the nothingness) then Te Po (the darkness) and then Te Ata (the light). Then came Ranganui (sky father) and Papatuanuku (earth mother). One importance of this creation story (and many whakatauki/proverbs and purakau/story telling) is the transmission of knowledge through the generations (Moewaka Barnes et al., 2013). The27arrativee of the creation story is a vehicle to better understand ways that family patterns and practices are enacted, "highlighting key tikanga (cultural values) relevant to childrearing and provides an example of the basic social unit of Māori society, the whānau" (Ware, 2014, p. 8).

Whānau Māori have diverse experiences and realities, however the concepts of whānau, hapū and iwi remain important for health and wellbeing. Within Te Ao Māori, these key structures can enable health and wellbeing. Whānau is the core unit that underpins Māori society and can include up to three or four generations (Durie, 2001; Herewini, 2018). "Through whānau, Māori societal concepts and practices were both socialised and reinforced, providing the basis for learning about and imparting knowledge, values and beliefs…" (Moewaka Barnes et al., 2013, p. 22). Caregiving roles also extended beyond biological parents to include kuia (grandmother) and koroua (grandfather) and whaea (significant female figures) and matua (significant male figures) (Ware, 2014).

Hapū has dual meanings. Within this thesis the term hapū predominately refers to pregnant, however it can also mean sub-tribe, greater than the whānau unit but not as large as iwi. Gilchrist (2017) explains that hapū "…remain[s] a significant Māori social unit important both to relational and cultural wellbeing and connection. They interconnect closely with whānau and iwi sometimes with very little differentiation" (p. 13). Ballara (1998) describes iwi as being the larger tribe in which members are genealogically and politically connected. Hapū and iwi are slightly removed from whānau unit but remain integral to Māori identity and structure (Gilchrist, 2017).

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[1] Variations to the story amongst different iwi, hapū and whānau.

These three concepts, whakapapa, creation story, and whānau, hapū and iwi, are central to understanding whānau and tamariki wellbeing from a Te Ao Māori perspective. The weaving of these three concepts provides an understanding of the "complexities that exist within Te Ao Māori and the layers linked within and across each other" (Moewaka Barnes et al., 2013, p. 21). Te Ao Māori concepts align to life course approaches that consider the complex interrelationships between life stage, genes, environment and risk exposure, and later health outcomes (Morton, et al., 2010; Morton et al., 2010; and Russ et al., 2014). Within Te Ao Māori life course presents through the nurturing and protection of māmā hapū. What the māmā experiences, physically, emotionally, and spiritually, will pass through to pēpi. The circular dimension of Te Ao Māori, connecting the whenua (placenta) back to the whenua (land) after birth and then returning to the land after death, provides another essential layer involving intergenerational relationships and influences. The concept of life course is explored further in section 1.5.1 antenatal care.

As signalled earlier, Western ideology is different to holistic health in that Western health centres on the individual. For example, Phibbs et al. (2010) assert that health is the express responsibility of the individual, stating "[it is] obvious that we should all look after our own health and remain free from illness and disability" (p. 207). This ideal is in direct contrast to Te Ao Māori (Wiri, 2007), where the family is both responsible and blamed for the good or ill health of a whānau member (Durie, 1996). Even though the Ministry of Health (2015b) state that whānau, hapū and iwi are important mechanisms for protecting and nurturing tamariki, the hypocrisy infers that this understanding is superficial at best, as personal responsibility for health is still prioritised in mainstream New Zealand.

Many health promotion messages have not considered several factors that are integral to Māori health. There have also been past discrepancies that affect how Māori view the current health system, for instance the inability of mainstream health professionals to approach, adapt and modify their practice to be culturally inclusive of Māori.

> I recall attending the doctors with my Koro (grandfather) and the nurse yells out pine! My Koro and I walk into the doctors' office and the doctor begins to explain some very important information relating to his heart and the medication he must now take. We walk

> back to the car and the first thing my Koro says is ‘did you hear what that silly woman called me? I’m not wood!’. I proceeded [sic] to ask if he recollected anything else the doctor had said but he replied ‘no that woman got me too angry and I didn’t listen after that’.

(Haereroa, 2015, p. 28)

The example above reflects the impact culturally inappropriate health workers can have on Māori, in this instance, the mispronunciation of a name overshadowed the essential health messages the professional was trying to convey. One of the reasons names are highly valued by Māori is that, traditional Māori names may have been passed down from tupuna (ancestors); therefore, pronouncing a Māori name incorrectly is a sign of disrespect, not only to said person, but also to the tupuna and whānau. Stevens (2012) describes the importance of pronouncing a person’s name correctly. “Providing an approach where health care professionals actively make the effort to pronounce I words as accurately as possible demonstrates not only a more comprehensive approacIMaori health care but also demIates Maori values of *mana* and *tikanga*” (Stevens, 2012, p. 17). Examples such as mispronu’ciation of one's name may be one reason some Māori choose not to engage with health services.

Further evidence that Māori approaches to health are not recognised is found in the notion that Māori solutions to health improvements are considered the ‘alternative’ or ‘unconventional’ idea. For example, the implementation of the wahakura, which is a weaved flax basket designed for whānau to sleep their baby in. It is a protective sleep space that can be used in an adult bed (Abel & Tipene-Leach, 2013). This device is a Māori solution to a Māori problem. However, the wahakura is not being heavily promoted by several District Health Boards or the Ministry of Health because it has not been ‘approved’ by Western standards of measurements. In other words, it has not been approved for endorsement by Western channels because it does not fit into the standard Western testing parameters. It is examples such as this—outright denial of everyday practices and traditional methods—that make it difficult for some Māori to engage or work in partnership with others.

Factors such as those highlighted above contribute to the trauma Māori have experienced and continue to experience. In relation to SUDI, the ‘culture of blame’ adds to this division. A recent headline demonstrates this culture, stating "A three-month-old baby died after sleeping in the same bed with her mum" (Brown, 2015). In New Zealand parents are made to believe sharing a bed with their baby is a form of child abuse as signalled by Morton (2013): "a coroner has again found himself pleading with parents not to sleep with their babi–s beside them - a practice he earlier condemned as child abuse" (p. 1). The current expectation placed on parents and caregivers in New Zealand by the New Zealand health system, is that bed-sharing is a simple act that a guardian either does or does not perform. What previous studies in New Zealand have determined is that a number of parents and caregivers do bed-share (Abel et al., 2001; Abel et al., 2015; Abel & Tipene-Leach, 2013; Tipene-Leach & Abel, 2019; Tipene-Leach et al., 2010) yet, culturally appropriate programmes that address this health concern are not prioritised. Durie (2001) explains, "the government objective that Māori should have the same opportunity to enjoy good health and wellbeing that other population groups in New Zealand have should not imply that the same measuring rod be used for all people or that similar outcomes are desired" (Durie, p. 7). In short, ensuring the safety and well-being of infants is the goal of all New Zealanders, however in the New Zealand health system it is clear the way infants are protected is not uniformly accepted.

1.4.3 Current Kaupapa Māori Driven Health Initiatives

Kaupapa Māori health interventions are emerging as solutions to addressing Māori health inequities. They are gaining popularity in many health areas including, sport and exercise (Hapeta et al., 2019), improving heart disease (Kerr et al., 2010), and alleviating obesity (Te Morenga et al., 2018).

At its core, Kaupapa Māori is a "philosophy most often expressed in the delivery of culturally appropriate and relevant services to Māori in the education, health and welfare sectors. These services are colloquially referred to as "by Māori, for Māori" (Eketone, 2008, p. 1). As well as a 'by Māori, for Māori' premise, according to Durie (2001) Kaupapa Māori healthcare initiatives should also include the following:

- the incorporation of tikanga Māori (Māori values)
- the involvement of whānau (family), hapū (sub-tribe) and iwi (tribe) in all aspects of the service, including treatment
- the use of traditional Māori healing practices
- the provision for cultural assessment cultural practices, and

- whakawhanaungatanga (connectedness between people, often based on genealogical connections)

(p. 227).

An example of a Kaupapa Māori health intervention is the Harti Hauora Tamariki tool (HHTt). The HHTt is a holistic screening tool that addresses a number of health, social, housing, and education areas aimed at ensuring tamariki and whānau have access to numerous services available, such as oral health or GP services (Australia New Zealand Clinical Trails Registry, 2018). The HHTt was piloted in 2015 and has three unique features. First, the tool uses a whānau ora approach to assess current status. Second, a built-in referral pathway to ensure follow up with specific health or social services or on the spot care when possible, and third, a continuous quality improvement approach. In 2015 a small review comparing clinical notes of children admitted to hospital while the HHTt was in use compared with children admitted pre-use of the tool found a dramatic increase in documentation of risk and health protective factors easily addressable by staff for hospitalised children and their whānau (Peng, 2015). Overall, those children who had received a HHTt assessment had 90% documentation of need compared to only 17% documentation in the clinical notes of ch'ldren who didn't get a HHT review.

There are a high number of Kaupapa Māori health initiatives operating in different localities however there is a severe lack of academic scholarship. Rolleston et al. (2020) found also found that "while there are many and varied interventions provided by Kaupapa Māori services, formal reports are often unavailable or if available, are produced in forms that do not adhere to Western notions of rigorous research" (p.133). Though there is a lack of academic literature, there are anecdotal accounts on social media and websites attesting to the popularity of Kaupapa Māori services. For instance, the Hapū WānanI

Te Puna Oranga (Māori Health Service) at Waikato DHB is one service provider, leading the Hapū Wānanga ki Taniui programme (Waikato District Health Board, 2019). The purposefully designed Kaupapa Māori antenatal education programme entrenched with Tikanga Māori values and beliefs, is a solution to the low rates of Māori attendance at antenatal education, this will be discussed further in the upcoming section. Between January and June 2018 more than 285 māmā hapū and support people attended Hapū Wānanga, of which 71% māmā hapū identified as Māori and fit into the category of 'hard to reach' or 'high-risk' (Waikato District Health Board, 2018). Below is feedback from a Māori māmā who attended Hapū Wānanga;

> The Hapū Wānanga was a catalyst to connect me to a strength that I never knew I had, to do something I never thought I could do- to give birth powerfully, loving the process and to feel confident in my body. To be informed and empowered about my choices. This should be offered to all mothers in Aotearoa
>
> (Hohia, 2014, November 14).

The design and delivery of the New Zealand health system still benefits non-Māori. However, Kaupapa Māori initiatives that prioritise Māori aspirations are a responsive and appropriate way to address health inequity gaps. Further, Dawson et al. (2019) explain, "holistic approaches addressing structural and intermediary barriers, or suites of solutions- for example wrap around care programmes- need to be considered and in identifying inequity reduction programmes that appear to be working, common threads of self-determination and community participation are key." (p. 11).

1.5 Overview of maternal and infant health

1.5.1 Antenatal Care

Both internationally and in Aotearoa, pregnancy, labour, birth and parenting has been identified as a key area of focus to improve health and wellbeing (Edmonds et al., 2022). The antenatal period is an especially crucial time with benefits for mother, infant, future generations and society as a whole (European Board and College Obstetrics and Gynaecology Scientific Committee, 2015; Makowharemahihi et al., 2014; Stevenson et al., 2016). The European Board and College Obstetrics and Gynaecology Scientific Committee (2015) explain that "the success of fetal life determines not only the health of the newborn, but also has a major impact on adult health and disease risk…health of future generations is to a great extent determined by the baby's growth and development within the womb" (p. 5). This statement aligns to the growing body of evidence showing a strong correlation between an individual's health while in utero, and their adolescent and adulthood health outcomes (Barker, 1995; Jacob et al, 2015), also known as a lifecourse approach (Graham & Power, 2004).

"A 'lifecourse approach' focuses on the different elements of the experience of health, from the moment of conception through childhood and adolescence to adulthood and old age" (Graham & Power, 2004, p. v). Research into life course approaches that consider the complex interrelationships between life stage, genes, environment and risk exposure, and later health outcomes, have received much attention (Barker, 1995; Morton et al., 2010; Morton et al., 2022; Russ et al., 2014). Moewaka Barnes et al. (2013) explains that "a life course approach is not incompatible with Māori understandings that experiences throughout the whole of life and intergenerationally are drivers of health" (p.18). Jacob et al. (2015) explains that "research based on the developmental origins of health and disease (DOHaD) has shown that multiple developmental factors operate from preconception through early life to affect the risk for later NCDs [non-communicable disease]" (Jacob et al., 2015, p. 18). The delivery of quality antenatal care directly influences the lifelong health and wellbeing of an individual.

The World Health Organization (2016) defines antenatal care (ANC) as;

> the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy. The components of ANC include: risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion.
>
> (p. 1).

Indigenous Peoples of Aotearoa, Australia, Canada and the United States experience greater maternal and infant health disparities compared to their non-Indigenous counterparts, including higher infant mortality rates (Smylie et al., 2010). "Rates of small for gestational age and preterm birth were also elevated for Indigenous compared to non-Indigenous infants" (Smylie et al., 2010, p. 1). As highlighted in earlier sections, factors such as colonisation, racism and lack of culturally appropriate health programmes contribute to poor maternal and infant health outcomes.

For instance, in Australia Aboriginal and Torres Strait Islander peoples experience poorer maternal and neonatal outcomes compared to their settler counterparts (Steenkamp et al., 2012). An audit of antenatal services in Western Australia was conducted to "determine the frequency with which Aboriginal women use existing antenatal services, the extent of routine care provided and how culturally appropriate antenatal services are" (Reibel & Walker, 2010, p. 66). The findings of the audit support other studies that recommend "culturally responsive care and cultural security are crucial to encouraging greater engagement by Aboriginal people with health services" (Reibel & Walker, 2010, p. 73).

Culturally appropriate Indigenous maternity care initiatives have been suggested as a means of addressing health disparities. Excitingly, and well overdue, is the resurgence of Indigenous and community-led models of maternity care. In Canada Indigenous midwifery programmes are offered (National Aboriginal Council of Midwives, 2020) to support and build the Indigenous midwifery workforce. The use of doulas in Canada (Doenmz et al, 2022), the United States (Adams, 2022) and Australia (Ireland et al, 2022) is gaining popularity amongst Indigenous Peoples from the respective countries, and positively impacting maternal experiences. In Australia, a multi-agency partnership between two Aboriginal Community-controlled health services and a tertiary hospital in urban Australia designed, implemented, and evaluated the new Birthing in Our Community (BiOC) service (Kildea et al, 2021). Kildea et al's (2021) study showed that a co-designed approach to maternal health service delivery underpinned by Birthing on Country principles had improved health outcomes in a number of areas for mother and baby. These and other examples of Indigenous practices enhancing maternal and infant outcomes will be explained further in this thesis. A crucial part of antenatal care is childbirth education classes (CBE) that can have lifelong impacts for māmā, pēpi, and whānau.

1.5.2 Antenatal education classes (AEC) or childbirth education classes (CBE)

Research has found that antenatal education classes (AEC) or childbirth education classes (CBE) provide an opportunity for expectant mothers to gain knowledge and skills that can improve behaviours, in turn improving health outcomes (Dwyer, 2009; European Board and College Obstetrics and Gynaecology Scientific Committee, 2015; Health Funding Authority, 2000; Health Services Consumer Research, 2008). CBE are highly valued within the health system. CBE are defined as:

> a specific component of antenatal support that aims to provide information on wellness behaviours during different trimesters of

> pregnancy and to prepare the mother (and usually her partner) for labour and birth. It may include information and advice on foetal growth and development, breathing techniques during labour, what to expect during labour and delivery, caesarean birth, breastfeeding, maternal postpartum issues and infant care. To promote healthy behaviours, increase social support, prepare women and their partners for childbirth and parenting and to detect vulnerable women and their families and whānau.
>
> (Dwyer, 2009, p. 13).

Antenatal or childbirth education has attracted considerable attention amongst Western health professionals and academics (Artieta-Pinedo et al., 2010; Brixval et al., 2014; Nolan, 2012; Nolan & Hicks, 1997). Both these terms are used interchangeably; within Aotearoa the term childbirth education is commonly used, whilst in the United States an Canada antenatal education is common. Throughout this thesis I will use these terms interchangeably, depending on the target audience for each chapter/ journal publication. As Dwyer (2009) explains CBE can provide opportunities for expectant mothers and whānau (family, extended not just nuclear), with skills and knowledge to optimise health for māmā (mother), pēpi (infant/baby) and whānau. The classes provide participants with an "opportunity to learn more about what will happen to them and the care they are likely to receive during labour and the birth, to understand what happens after their baby is born and to meet other parents-to-be" (Research New Zealand, 2014, p. 28). Yet despite the potential positive outcomes most academic scholarship focuses on Western antenatal education approaches.

Cliff and Deery's (1997) study examined the social, class, age, marital status and attendance/non-attendance at antenatal classes of population groups in the UK. Their findings showed that most non-attendance was from young, unmarried, working-class women; these women also perceived classes negatively, a potential factor for non-attendance. Cliff and Deery's (1997) study also highlights that antenatal classes appear to mainly attract white women, and questions what education is received by Westernised Asian women, women of oriental and other racial origin.

AE classes have the potential to improve and enhance maternal and infant health outcomes yet the despite an overwhelming need to focus on 'vulnerable' or 'at risk' communities, there is a severe lack of research on, Indigenous responses to Western antenatal classes, and lack of antenatal education studies from an Indigenous perspective.

1.6 Māori maternal and infant health

1.6.1 Overview of maternity care delivery in Aotearoa

The New Zealand health system provides free maternity services to all eligible women (Ministry of Health, 2021). Ideally, the maternity service provides pathways from antenatal care, during the pregnancy, labour and birth stages, managed by a Lead Maternity Carer (LMC) (i.e. a hospital or community midwife, GP or obstetrician). The LMC provides care until the newborn(s) is 6 weeks of age. Then, the infant is transitioned into the Well Child/Tamariki Ora service who will monitor the infant/child's growth and development until the age of 4 (Ministry of Health, 2021). Despite universal provision of maternity care Makowharemahihi et al. (2014) study found systematic failures that negatively impact Māori and their access to early antenatal care because of the fragmentation between primary non-LMC maternity care and LMC services. Stevenson et al. (2016) also refer to the limitations of the maternity system, explaining that there are "numerous maternal and infant health disparities between Māori and non-Māori" (p. 125).

Ministry of Health funded pregnancy and parenting education classes, are available throughout New Zealand, providing expectant mothers with knowledge and skills of current 'best health practice' during the pregnancy, labour, birthing, and parenting stages (Ministry of Health, 2015a). However, with regard to CBE, much like antenatal care, Māori are less likely to attend and engage with antenatal education classes, and those that do are more likely to present later in their pregnancy (Hodgetts et al., 2004; Makowharemahihi et al., 2014; Pihama, 2011; Ratima & Crengle, 2013)

1.6.2 Māori maternal and infant health outcomes

For well over 20 years in Aotearoa, Māori maternal and infant health outcomes have been, and continue to be, significantly poorer than their non-Māori counterparts (Filoche et al., 2018; Jackson & Tobias, 2001; Simpson et al., 2017). Reports show that Māori experience higher maternal smoking rates (Glover & Kira, 2011), higher rates of Sudden Unexpected Death in Infancy (SUDI) (Abel & Tipene-Leach, 2013), and higher children hospitalisation admission rates for avoidable illnesses, than their non-Māori counterparts (Craig et al., 2012).

A study by Andrews et al. (2014) examined Māori incidences of smoking in pregnancy is compared to non-Māori. A cohort of 66,494 women was examined to identify smoking prevalence at Lead Maternity Care (LMC) registration, between the 2008 and 2010. Of the total 66,494 cohort, 9869 women identified as Māori (14.84%). Forty eight percent of women that smoked were Māori (Andrews et al., 2014). Meaning, although Māori made up a very small portion of the cohort study, they had a higher smoking prevalence than the other ethnicities examined.

As highlighted earlier, poor maternity care impacts on infant health, not only in the early stages of life but in later life. Compared with non-Māori infants, Māori infants have higher mortality rates, lower birth weight, and higher rates of illness (Waitangi Tribunal, 2019). Some of the risk factors that impact on maternal and infant health include, maternal smoking (Glover, 2004), infant and child smoke exposure (Thomson et al., 2005), low birth weight (Muthayya, 2009), little or no exclusive breastfeeding (Rollins et al., 2016), and lack of full immunisation for the infant/child (Mitchell et al., 1995).Unfortunately, Māori are overrepresented in a number of these health areas. Nationally, for instance, Māori infants have higher numbers of Sudden Unexpected Death in Infancy (SUDI) and SIDS fatalities. The following Ministry of Health (2015b) statistics show national infant health statistics. "The SUDI rate among Māori infants was nearly 5 times as high as that among non-Māori infants (RR 4.70, CI 3.35–6.59)… The SIDS rate for Māori infants was about 3 times that of non-Māori infants (RR 3.12, CI 1.92–5.07)" (p. 48). Alarmingly, Māori make up only 15% percentage of the overall New Zealand population yet Māori by far have the poorest maternal and infant health outcomes.

Specific to the Waikato District Health Board (DHB) region, in 2013 84,900 Māori lived in the region; making up 23% of the District's total population, the highest population of Māori in the country. Waikato DHB has approximately 2,000 Māori live births annually and this number is increasing (Robson et al, 2015). Robson et al. (2015) provides the following data on hospitalisations of children that were potentially avoidable. "On average, 1,800 hospitalisations per year of Māori children were potentially avoidable…at a rate one-third higher than that of non-Māori" (p. vi). The

Waikato District Health Board (2018) Board Meeting – 27 June 2018 indicates that Māori in Waikato have, 1) fewer babies fully immunised by 8 months compared with New Zealand European, Pacific, and Asian babies, and 2) over 50% of pregnant Māori women smoke.

As a result of the readily available evidence on the lifecourse implications during conception and while in utero, New Zealand has prioritised maternal and infant health as essential to improving health and well-being. Access to, and quality of, antenatal care is a significant factor affecting both maternal and infant health (Chen et al, 2007; Sayers, 2009). Yet, research has shown that Māori are more likely to present later in their pregnancy to antenatal services (Hodgetts et al., 2004; Makowharemahihi et al., 2014; Pihama, 2011; Ratima & Crengle, 2013). Previous sections of this chapter provided a wider context of factors that contribute to poor health outcomes for Māori. The subsequent section explores factors that contribute directly to poor Māori maternal and infant health.

1.6.3 Disestablishment of traditional Māori maternal and infant practices

Colonisation affected almost all aspects of Māori maternities "resulting in the marginalisation of the maternal figure, medicalisation and institutionalisation of the maternal body, and control over the rearing of our children" (Simmonds & Gabel, 2016, p. 149). Here I investigate three significant factors that have contributed to the disestablishment of traditional Māori pregnancy, birthing, and parenting knowledge and practices.

First, the introduction of the Western health system, specifically hospital births. When colonisers first arrived, they observed Māori practices. Documented in Clarke's (2012) book are accounts from colonisers on Māori birthing practices, specifically the significant differences between labour and birthing of Māori women, and settlers. Clarke (2012) notes that colonisers were particularly impressed with Māori and the short recovery time after birth and the use of plants and water to encourage the afterbirth. Yet this system that was working for Māori was ridiculed and replaced with Western systems, such as hospitals (Wepa & Te Huia, 2006). With the introduction and forced use of these hospitals, home births (defined for these purposes as a location that is not a hospital such as a marae or whare) rapidly decreased for Māori (Simmonds & Gabel, 2016).

Second, the introduction of certain Western policies and legislations that specifically impacted on Māori maternal and infant health practices. Arguably, the most damaging act to pass through government that devastated pre-colonisation Māori pregnancy, birthing, and parenting practices was the Tohuanga Suppression Act 1907 which "prohibited traditional healing practitioners who were also the principle repositories of cultural knowledge and practices" (Ware, 2014, p. 3). These practices were abolished with the introduction of legislation such as the Tohuanga Suppression Act 1907 with Ware (2014) further saying, "this outlawing of tribal repositories mean that Māori ways of teaching, learning, and transmitting knowledge were heavily restricted, including knowledge about pregnancy, birth and parenting" (p. 3).

The Midwives Registration Act 1904 was another policy that impacted traditional Māori birthing practices. As Simmonds (2014) explains:

> the outlawing of a whole class of Māori intellectuals, healers and kaitiaki through the Tohunga Suppression Act and the Midwives Registration Act stripped away many of the spiritual elements, ceremony and tikanga of birth and further marginalised mana wahine maternal knowledges (p. 31).

Forcefully, the introduction of these polices disrupted Māori birth attendants who were replaced with medical professionals trained through a Pākehā system. In 1925 Plunket was formed to 'inculcate' the responsibilities of maternity to all New Zealanders (Bryder, 2001). However, during Plunket's establishment there was a dispute between Plunket and the Department of Public Health which led to a separate system for Māori infant care (Simmonds, 2014). Māori were unable to attend Plunket clinics and Plunket nurses were restricted from entering Māori homes. As a result, district nurses, trained under Plunket, tended to Māori whānau. These scenarios meant that settlers wanted Māori to assimilate to Pākehā ways of birthing yet did not see nor treat Māori as equal (Simmonds, 2014).

The maternity sector is an example of the results of colonisation. By the 1970's almost all births in Aotearoa were institutionalised, with Banks (2007) noting that only 13x homes birth were recorded in 1973 for the entire country. As Tupara and Tahere (2020) explain, "midwives are the main providers of maternity care in Aotearoa, Pākehā midwives make up the majority of the midwifery workforce, and Māori women and babies are overrepresented in health inequities and negative or sub-optimal maternity outcomes" (p. 3).

The negative impact of this act is still experienced by many Māori to this day.

Finally, the marginalisation of the role of wāhine, and tapu of the maternal body (Simmonds & Gabel, 2016). Prior to colonisation Māori society had existing maternity systems in place; these systems included key people such as tohunga and key practices such as te reo Māori, mātauranga Māori, and spiritual knowledge and practices (Mikaere, 2003). Simmonds and Gabel (2016) explain how the state disregarded these systems, instead purposefully, and intentionally, attacking Māori maternities and replacing them with a system that to this day, privileges Pākehā cultural constructs.

1.6.4 Impact of Covid-19 on pregnancy, labour, and birthing

The global Covid-19 pandemic was unprecedented and created a fast-moving and changing public health crisis (Blumenthal, et al, 2020). The impact of Covid-19 severely disrupted maternity services in Western countries (Townsend et al, 2021); including Aotearoa (Crowther et al, 2022). Vasilevski et al's (2022) study on receiving maternity care during the height of the Covid-19 pandemic lockdowns in Australia revealed that partners and support people of birthing women were negatively impacted by restrictions on maternity wards. Participants reported "…feelings of isolation, psychological distress, and reduced bonding time with babies. Conflicting information and processes within and across maternity services contributed to feelings of uncertainty and a perceived reduction in the quality of care" (Vasilevski et al, 2022, p. 298). Dixon et al's (2023) findings echo similar sentiment of negative experiences due to maternity restrictions including disruption to care with feelings of anxiousness and uncertainty, and feelings of isolation due to separation from their partners/whānau. Despite negative experiences of maternity services due to Covid-19 restrictions, participants from both Dixon et al (2023) and Vasilevski et al (2022) study describe some positive aspects of Covid-19 restrictions including restrictions on visitor numbers allowed time for bonding between mother and baby, and high hygiene standards. Dixon et al (2023) participants specifically note the relationship with the midwife as a positive aspect, further stating "…the importance of the midwifery continuity of care relationship, with midwives often going above and beyond usual care and filling the gaps in service provision" (p. 5). Covid-19 is a recent pandemic therefore medium- and long-term impacts of Covid-19 are yet to be identified. Further research into maternity experiences and the impact of Covid-19, specifically for Māori is needed (Elers et al, 2021).

1.6.5 Māori and contemporary antenatal education

As signalled above, Māori maternity structures were replaced with a Western system that has had devastating consequences on many generations of Māori wāhine. Traditional transmission of knowledge from elders, whānau, and members of the community, has since been replaced with formal CBE.

Like findings from international research, studies that focus primarily on Māori and CBE were extremely rare. Many studies that did have Māori antenatal education as a topic, had a broader and extended focus. These topics ranged from maternity care, antenatal care, and education, hapū ora (covering fetal/gestational and neonatal periods), or a combination of all topics (Moewaka Barnes et al., 2013). In saying that, the following studies provided material related to antenatal education classes.

A small study done by Ellis (1998) showed that 30% of the Māori respondents in her study attended antenatal classes, even though all respondents noted they had heard of antenatal classes. Although this study took place more than 20 years ago, these figures align with other findings that show Māori are less likely to engage in CBE (Health Funding Authority, 2000; Health Services Consumer Research, 2008; Ratima & Crengle, 2013).

There have been several studies that examine factors contributing to inaccessibility of CBE for Māori. One of these factors involves the stigma and discrimination young Māori mothers' experience. Pihama's (2011) 'Overview of Māori teen pregnancy' notes that often young Māori women are cast as being problematic and high risk, especially as teenage mothers. This view is also supported by Lawton et al. (2013) who claim "young Māori mothers experience the stigma of being Māori and being teenage mothers. Their babies also experience poorer health outcomes than non- Māori"(p. 247). The implications of being discriminated against can be seen by the low rates of attendance at Western based antenatal education programmes.

Another factor that impacts Māori inaccessibility to antenatal education is the Western paradigm of health which focuses on the individual, in this case the expectant mother, with little to no focus on the whānau. Whānau support is recognised as an important aspect of the antenatal journey for Māori (Durie, 1985), yet experiences noted in a study by Rimene et al. (1998) of attendance at antenatal classes involved primarily the mother, and/or her husband. Further, women that did not attend antenatal class noted that they expected their mother to, or their mother had already, passed on information about pregnancy and birth, though some did note that the information they received was limited. Two key points are highlighted from this study. First, Māori value the opinion and experience of their whānau who have gone through the process of childbirth before. Second, an opportunity exists for CBE to expand their scope and include the wider whānau.

Dwyer's (2009) report on Childbirth Education in New Zealand was a large scale study incorporating seven different methods of data collection using a mix of qualitative and quantitative methods. Findings from this study concluded that, "both Māori and Pacific peoples were underrepresented amongst women who attended antenatal education. Only 10 percent of CBE participants were of Māori ethnicity" (Dwyer, 2009, p. 84). Although the number of participants in this study was high, the number of Māori participants was significantly low. This reflects a severe gap in research with a need to focus specifically on Māori to understand factors that prevent Māori from attending and participating in antenatal education, but also to identify factors that would improve and encourage attendance.

Māori childbirth educators and midwifes have identified this critical gap in maternal care and delivery for Māori. One of the responses to this gap was the resurgence of Kaupapa Māori antenatal classes in different pockets of the country. As noted earlier in this proposal, Hapū Wānanga is an example of a Kaupapa Māori antenatal education class that aims to empower māmā and whānau (Waikato District Health Board, 2019). A search through the internet search engine 'Google' and the social media platform 'Facebook' provided a range of Kaupapa Māori antenatal education classes throughout New Zealand; some of these classes included, Hapū Māmā, Mokopuna Ora Pregnancy and Parenting, Turuki Health Care Ngāti Whātua Ōrakei Kaupapa Māori Childbirth Education Classes, Huna Trust- Hei Tiki Pumau Kaupapa Antenatal Programme, and Awhi. Many of these programmes seem to be well received by service users in their locality; providing a positive, enhancing, and empowering aspect of Māori birthing, learning and sharing. Unfortunately, much of this information is anecdotal found sporadically in Government reporting documents, such as DHB Board papers, or on websites and throughout social media; much of the information is isolated or requires specific searching, and uncovering of layers. While this highlights a gap in research, it does provide an inspiring and positive pathway forward.

In a response to the low Māori attendance rates, the last 10 years has seen a resurgence of Kaupapa Māori CBE in different pockets of the country. Some of these classes have been called Hapū Wānanga with locations throughout the Northland, Midlands, greater Wellington, and Nelson Marlborough DHB regions (Collins, 2018; Gee, 2018; Groenestein, 2018; Tebbutt, 2018). The Waikato District Health Board (2019) describe their Hapū Wānanga programme as a "**FREE** Kaupapa Māori labour, birth and parenting programme designed for young pregnant women and their families/whānau in the Waikato" (p. 1). Participants of Hapū Wānanga value the programme, as is evident in the testimony of one wahine Māori who attended this programme below:

> Hapu Wananga was one of the best things we ever could have done to prepare for our little tane. We learnt so much and are using so many of the skills, tips and tricks you shared with us which has enriched our entire experience stepping into parenthood. "I feel everyone should go through Hapu Wananga as it is such an invaluable experience! We are so forever grateful. We are forever thankful to you both and wish you all the best with all your future Hapu Wananga!"

(Kelly- Child Birth Educator- Waikato, 2019).

Although, anecdotally, programmes such as Hapū Wānanga seem to have success for Māori women specifically, but not exclusively, these antenatal programmes are isolated, sporadic and rely heavily on the very few qualified Māori health professionals in this specialty. Due to the minimal evidence-based research on this programme, as well as the factors mentioned throughout this chapter, Western antenatal programmes dominate the antenatal care landscape in New Zealand. Still, the need for Kaupapa Māori programmes will be demonstrated in this thesis, supporting findings from Ellis

(1998); Makowharemahihi et al. (2014); Moewaka Barnes et al. (2013); Ratima and Crengle (2013) indicating that Māori driven solutions need to be adopted to improve Māori maternal and infant health.

1.7 Research Overview

It is clear from prior research that in order to achieve equitable Māori health outcomes, systems, structures, and services must identify and address barriers for Māori (Came et al., 2016; Jansen et al., 2008; Robson et al., 2007; Signal et al., 2007). However, recent findings by the New Zealand Law Society (2019) noted that the Waitangi Tribunal found, "the reforms ushered in by the Act in 2000 [New Zealand Public Health and Disability Act 2000] failed to consistently state a commitment to achieving equity of health outcomes for Māori" (p. 1). Maternity care is one crucial sector that has seen systematic failings for Māori. Lawton et al. (2016) declare that "despite a publicly funded system, a lack of health sector integration resulted in multiple missed opportunities…" (p. 52) to adequately cater for Māori teenage parents.

This thesis focused on solutions to increase access and engagement of wrap around health and social services, with whānau, by providing a model of care that is holistic, responsive and inclusive of Māori needs and aspirations.

1.7.1 Purpose

The maternal and infant health inequities between Māori and non-Māori are stark and although recent attention from the Ministry of Health and Health Research Council has focussed efforts in the areas of maternity and the first 1000 days, Māori are still overrepresented in negative health statistics. Kaupapa Māori initiatives are potential solutions to address these needs. Traditional Māori birthing practices are being revitalised across the motu (land) and will be a focal point throughout this thesis, however it is not within my scope to define tikanga and explore Te Ao Māori aspects of Māori birthing practices and knowledge. Instead, the purpose of my research is to provide a platform and voice for those working within whānau, hapū and iwi, to achieve positive Māori maternal and infant health outcomes.

This study draws on current literature to identify gaps, issues, and attitudes, preventing Māori maternal and infant health from thriving. Aside from the recent works of Dr Namoi Simmonds, Professor Leonie Pihama and Dr Ngahuia Dixon (to name a few) in traditional Māori birthing and reclamation of Indigenous birthing knowledge and practice, studies using Western paradigms and methods have overwhelming focused on negative statistics. Professor Linda Tuhiwai Smith argues that Western research has negatively affected Māori, and many Indigenous Peoples globally. One distinct consequence is the superior ideology of the Western researcher privileging Western ways of knowing and imposing these on those being researched (Smith, 1999). Recently, Kauapapa Māori Research (KMR) has been an adopted research practice for Māori, and in some instance non-Māori. Simple, KMR is "a way of structuring assumptions, values, concepts, orientations and priorities" (Smith, 1999, p. 183). A key feature of KMR is the undertaking research that directly benefits the communities the research is targeting, a feature severely overlooked by non-Indigenous researchers. Using a mana enhancing foundation that provides a space for the voices of Māori wāhine to be validated, this thesis is distinctive in that it goes beyond current literature and research that predominately identifies problems, and instead seeks to highlight indigenous solutions.

This study contributes to the wider purpose of advancing and reclaiming Māori birthing knowledge and practices. Specifically, this thesis focuses on antenatal education.

As noted earlier, literature has shown that attendance at antenatal education classes can improve maternal and infant health outcomes, yet Māori attendance at antenatal education classes in New Zealand compared to non-Māori is significantly low (Ellis, 1998; Families Commission Kōmihana a Whānau, 2011; Moewaka Barnes et al., 2013). This research not only provides a potential solution to increase these numbers, but also extends to connect existing health and social services with māmā hapū.

1.7.2 Aim and research questions

The overarching aim of this thesis is to understand the potential of Kaupapa Māori antenatal wānanga to enhance maternal health outcomes for Māori. To address this, I worked with two Kaupapa Māori antenatal education programmes- Hapū Wānanga, Waikato District Health Board, and Whirihia Te Korowai Aroha, Whaanau Awhina Whaanau Ora Plunket.

I examined the following specific research questions:

1. To what extent are Indigenous Peoples from Aotearoa, Australia, Canada and the United States, prioritised and involved in antenatal education classes? Then, what are their experience in antenatal education classes?
2. What do existing evidence databases tell us about māmā hapū attendance, and responses, to Hapū Wānanga classes?
3. What is involved in the co-design of a holistic assessment tool for Whirihia to address Māori maternal health need?
4. What are the experiences of Māori māmā engaging with health and social services post March 2020 Covid-19 lockdown?

1.7.3 Thesis Structure

The remainder of this thesis follows the subsequent structure. Chapter 2 is the methodology chapter. Immediately following will be references from Chapters 1 and 2. The subsequent four chapters are written and presented as journal articles, Chapters 3, 4, 5, and 6. Figure 1 shows the four research activities within each of the four chapters, further detail is provided under section 2.8.2. research activities. A preface will introduce each chapter and provide a segway from the previous chapter. The preface connects the chapters providing detail on how each chapter contributes to the overall aim of the thesis. Chapter 7 will be the discussion and concluding thoughts.

Figure 1- Thesis structure

Chapter 3 was accepted for publication to the 'Archives of Public Health' journal. This chapter is a systematic review investigating the prioritisation and involvement of Indigenous Peoples in antenatal education. This chapter provides a rationale and justification to focus on Indigenous antenatal education solutions.

Chapter 4 was accepted for publication with the 'MAI journal' (a New Zealand journal of Indigenous scholarship). This chapter highlights a successful example of a Kaupapa Māori antenatal education intervention that resulted in participant engagement and endorsement.

Chapter 5 was submitted and currently under review to 'Kōtuitui: New Zealand Journal of Social Sciences Online'. This chapter focuses on the reflections of the co-designed holistic assessment tool (the Whirihia tool) for the Kaupapa Māori antenatal wānanga 'Whirihia Te Korowai Aroha' for organisation Whaanau Awhina Whaanau Ora Plunket. This reflective account provides examples of key considerations that align to the HPW framework in the hope that it will afford some guidance for fellow emerging researchers who wish to undertake ethical co-designed health research with Māori (and non-Māori) communities and organisations.

Chapter 6 will be submitted to the 'Journal of Racial and Ethnic Health Disparities' after submission of this thesis. This chapter examines how a mana wahine approach amplifies the lived realities of postnatal Māori māmā engaging with health and social services. Further, this chapter explores contributing enablers and barriers that shaped these experiences to better understand what is required for health services to be responsive to Māori health needs and aspirations.

The final chapter, Chapter 7, draws the argument of the thesis together. Drawing on four key points, language and positioning of Indigenous Peoples, evaluation and monitoring of health initiatives, co-design and Kaupapa Māori spectrum, and position as a Māori wahine researcher, I summarise key findings and contributions to literature, reflect on the research methodologies, discuss implications for health research, and suggest areas for future focus. Finally, this thesis reflects on its findings and how they contribute to a holistic approach to improving Māori maternal health outcomes.

Chapter 2: Methodology

2.1 Research design

There are numerous scholars that have highlighted concerns with research that has silenced, ignored, misrepresented and misinterpreted indigenous voice (Smith, 1999; Smith et al., 2016; Stevenson, 2018). A contributing factor in these concerns is the imposed use of Western theories because of the lack of value put on indigenous knowledge, specifically within academia through what Smith et al. (2016) have termed as 'regimes of control' (p. 132).

The overall purpose of my research design, and this thesis, is to challenge prevailing assumptions and embedded colonial ideologies that are responsible for poor Māori health outcomes. Chakanyuka et al. (2022) explains how "centering Indigenous ways of knowing, doing, and being in research development, synthesis, and knowledge translation promotes a relational rights-based approach with Indigenous Peoples that disrupts historical dominance of Eurocentric approaches to research about Indigenous Peoples" (p. 2). I also wanted to employ methodologies that are consistent with Indigenous, specifically Māori, world views and values.

There are two key features of research methodology that Smith (2015) emphasises. First, priority should be afforded to the "underlying theories and assumptions upon which method is based" (p. 47) rather than focusing solely on the details of methods used. In other words, the researcher should clearly articulate their theories and assumptions that shape their world view. A focus on this understanding will provide insight as to how, and why, methods are then selected. The second emphasis looks at how the researcher then positions themselves in the world (Smith, 2015).

The following sections will explore the following, theoretical perspectives, the different methodologies and research activities employed, and my position as the researcher. These sections will then speak to the two key features highlighted above, ultimately addressing why and how the chosen methodologies guided the research design and activities.

2.2 Theoretical perspectives

The consequential use of dominant western theories has resulted in, one, being Māori has meant the denial of our knowledge (Pihama, 2005), and two, disruption to the

Māori world (Smith, 1999); specifically the relationship between mana wahine and mana tāne (Mikaere, 2003). A number of Māori wāhine scholars have made clear the challenges Māori women have, and continue to face, such as being seriously misrepresented, voices silenced, and our stories demeaned and devalued as 'myth' or figments of cultural imagination (Jenkins & Pihama, 2001). This has meant that Māori women must position ourselves in "complex and tricky spaces that require careful negotiation" (Simmonds, 2011, p. 11). These complexities have created understandable apprehension amongst Māori wāhine, particularly within research, and more specifically underlining theories. Growing from this apprehension, Irvine (as cited in Jenkins & Pihama, 2001) presents an opportunity for Māori wāhine by stating, "if we are able to define, develop and control our own theoretical base as Maori women then theory is a tool that we can use for our own interests" (p. 293).

This research draws on knowledge from both an Indigenous and Western perspective. Kaupapa Māori research is described by Walker et al. (2006) as, "…research developed as part of a broader movement by Maori to question westernized notions of knowledge, culture, and research" (pp. 331). I also draw on a mana wahine approach, as an extension of KMR theory, to privilege the voices and stories of Māori wahine. As discussed in chapter 1, Kaupapa Māori is founded on a 'by Māori, for Māori' premise. This thesis is underpinned with Kaupapa Māori research principles, discussed in the subsequent section. However, the research activities are positioned with a Western system, the New Zealand health system. As such, I argue that health services, and health research, can never authentically be Kaupapa Māori if it must contend with Western parameters. For instance, childbirth education classes can be designed and delivered using Kaupapa Māori principles, however the pregnancy and parenting specifications that publicly funded CBE classes must adhere to, were developed by a non-Māori organisation, the Ministry of Health. To that end, guided by Kaupapa Māori principles, I also employ Māori-centred research as an understanding that Western confinement can limit the extent to which Kaupapa Māori can thrive.

These theoretical perspectives have shaped the research activities carried out in this thesis. Importantly, these perspectives provide greater depth and meaning to influences that positively, and negatively, impact Māori maternal health. This thesis critically critiques both academia and health services to better understand what is needed to make positive, transformational change, for māmā hapū and their whānau.

Furthermore, I am interested in the social, historical, and ideological forces that will inevitably shape and influence my research activities and outcomes.

2.3 Kaupapa Māori Research (KMR)

This research will also adopt several characteristics of Kaupapa Māori Research. Smith (2015) explains,

> Kaupapa Māori Research is neither fixed nor rigid. It is open-ended, it is ethical, systematic and accountable. It is scientific, open to existing methodologies, informed and critical. BUT, it comes from tangata whenua, from whānau, hapu and iwi. It is undertaken by Māori. It is for Māori and it is with Māori.

(p. 47).

Control over research, including research design, processes, and intended outcomes is at the core of KMR (Pihama, 2005; Smith, 1999, 2015). The validation of Māori knowledge and affirmation of te reo Māori me Tikanga is also a central feature. Implementation of these points is reaffirmed by Smith (2015) who goes further to explain that research involving Māori should put Māori at the forefront and align with their interests, needs, and aspirations, rather than the researcher's and their agenda. This means there are great expectations on the researcher to ensure they are addressing the needs of those the research is intended for. Smith (2015) poses specific questions any researcher who is undertaking KMR should address including, "(i) What research do we want to carry out?, (ii) Who is that research for?, (iii) What difference will it make?, (iv) Who will carry out this research?, [and] (v) How do we want the research to be done?" (p. 48). Expanding further are questions regarding whether the research is worthwhile, who will own the research, and who will benefit?

KMR emphasises several significant points that I will use in my research. For instance, as a Māori researcher, the questions Smith (2015) highlights above are always at the forefront of this research, with the answers being pivotal to shaping the aims and methods of my research.

Another key component of KMR that aligns specifically with my own research goals, is that the research is transformational. Pihama (2016) explains that transformation can take many forms, from a hīkoi with thousands of people, to a whānau transformation such as the revitalising of te reo Māori in a whānau that had been denied this opportunity for three generations, a journey of transformation that I am currently experiencing.

There are some scholars who argue that KMR is a form of, or has characteristics of, critical theory (Eketone, 2008; Mahuika, 2008; Smith, 2002; Smith, 1999). Came (2012) utilises critical theory to "break [sic] through taken-for-granted views of the world in order to step outside hegemonic paradigms to look with critical eyes back into the neo-colonial system" (p. 34). I use this element to identify taken for granted assumptions and discourses, with specific reference to dominant maternal and infant health knowledge. Using a critical lens, I confront and challenge the assumptions of institutions which support privilege. It is vital to address these dominant assumptions to emphasise the equity differences of Māori and Pākehā. Came (2012) expands further to say that "critical theorists frequently argue that privileged groups have an interest in supporting the status quo to protect their advantage" (p. 34). To address these positions of privilege, they must be challenged.

A component of critical theory is critical race theory which is "primarily concerned with studying racism, how it has been created and maintained, and reshaping power relations" (Came, 2012, p. 35). I have already provided information on the damning consequences of racism for Indigenous Peoples, and Māori, specifically within the New Zealand health system. The reason I will draw on critical race theory is because it "challenges the traditional claims that [sic] institutions make toward objectivity, meritocracy, colorblindness, race neutrality, and equal opportunity. Critical race scholars argue that these traditional claims act as a camouflage for the self-interest, power, and privilege of dominant groups…" (Solórzano & Yosso, 2002, p. 26). A focus on New Zealand maternal and infant services is needed and critical race theory will refocus the problem from an individual, specifically Māori problem, to a systems and service delivery problem.

Within a KMR paradigm, I draw on critical and critical race theory to challenge dominant hegemony. I argue that the contributing factors that created contemporary 'problems', were created because of Western ideals. Therefore, a non-Indigenous theory is needed to echo and highlight how ongoing Western hegemony created, and exacerbates, problems for people with non-Western values. Therefore, the critical theory lens will be applied to align the findings credible in a Te Ao Māori worldview, to the non-Māori context.

Although this research shares several traits consistent with KMR, the wider scope of the research does not meet the key criteria of KMR, which is "by Māori, for Māori, with Māori" (Smith, 1999). Findings, to an extent, will be constrained by the Western dominated health system, which was not developed by Māori, for Māori, with Māori. Some examples of how the health system is Western dominated include who has control over aspect of, funding allocation and distribution, programme measures, and who determines what knowledge in health is regarded as valid, adopted and practiced. Māori have no control or sovereignty of these aspects, therefore New Zealand's health system is largely premised on Western ideals.

KMR aligns philosophically and pragmatically with Māori worldviews and values. Pihama et al (2002) explains that Kaupapa Māori "…challenges, questions, and critiques Pakeha hegemony. It does not reject or exclude Pakeha culture. It is not a one-or-the-other choice" (pp. 33). Although this research will not be entirely a KMR project, the selected methodologies aim to advance, develop, and transform Māori people and Māori knowledge.

2.4 Mana wahine research

I also draw on the theoretical approach of mana wahine, an extension of KMR theory. Providing a concise and accurate definition or translation of mana wahine is problematic, however Simmonds (2011) has collated characteristics from a range of scholars within this field. At its base, mana wahine is about "making visible the narratives and experiences…of Māori women" (Simmonds, 2011, p. 11); and its distinctiveness is "such that it enables Māori women to analyse and understand our place in the world" (Simmonds, 2011, p. 21). Mana wahine has been likened to a type of Māori feminist discourse. Scholars such as Leonie Pihama, Linda Smith, Kuni Jenkins and Naomi Simmonds, to name a few, have brought the mana wahine theoretical and methodological movement to light, in what could be argued is a form of resistance to colonisation, as well as an embrace of tino rangatiratanga (Jenkins & Pihama, 2001; Simmonds, 2011). Although still in its infancy as a theoretical approach, components of mana wahine have highlighted current negative discourses including, how Māori were/are different, further implying that we are somehow lacking

(Simmonds, 2011). Our voice as 'Māori' and 'woman', means we face complex challenges and therefore must navigate everyday spaces carefully. In spite of these obstacles, mana wahine challenges these dominant hegemonies but most importantly can validate mātauranga Māori (Simmonds, 2011). The underpinning of both KMR principles and the discourse of mana wahine will provide a uniquely Māori perspective pivotal to this research. Incorporating Māori solutions to the maternal space, a space that embodies mana wahine, is absolutely needed to transform Māori maternal and infant health outcomes.

As a Māori wāhine, the mana wahine approach aligns closely with my cultural, personal, and professional values[2]. Simmonds (2011) rightfully advises researchers undertaking this approach to "reflect on the extent to which we as Māori women have internalised and thus perpetuate colonial discourses"(p. 14). This guidance has encouraged me to reflect on my assumptions of the world, specifically in regard to being proficient at understanding and navigating the Pākehā world. In saying that, my ability, though still in need of much growth and development, to comfortably move into Te Ao Māori, provides me with a unique insight to empathise with Māori wahine, as well as identify the role dominant hegemony has played in creating and continuing these shortcomings. Identifying and addressing these faults involves addressing Western failings and validating mana wahine knowledge as a positive way forward.

KMR and mana wahine research paradigms align to Māori aspirations of health and address many of the shortcomings of Western research paradigms. The research activities carried out in the subsequent chapters have the principles of KMR and characteristics of mana wahine approach at their core. However, as highlighted in the previous chapter, the New Zealand health system is a Western system. This premise is in complete contrast to Kaupapa Māori fundamentals, which is 'by Māori, for Māori'. The health system is "dominated by western bio-medical discourses that under-value Māori…in the conceptualisation, structure, content, and processes of health policies, despite Te Tiriti o Waitangi guarantees to protect Māori interests" (Came, 2012, p. 1). For this thesis, it means that despite the research activities being grounded in KMR theory and mana wahine perspectives, external factors, such as the New Zealand Health Systems, encroach on this research so that it is not exclusively

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[2] I acknowledge that a non-gendered approach is relevant to childbirth education, however this thesis is focused on a mana wāhine perspective privileging the voice and experiences of Māori wāhine.

‘by Māori, for Māori’. In recognition of the latter, this thesis incorporates a Māori-centred approach, grounded in a desire to make a transformative difference for Māori.

2.5 Māori-centred research

Hudson et al (2010) define Māori-centred research as research that “involves Māori as significant participants in various roles, including research team and participants, and possibly analysis and outcomes” (p. 9).

My research focuses on Māori and involves Māori at all stages of the project. Similar to KMR principles, three principles that underpin Māori-centred research are used to inform research processes, practice, and tikanga (protocols and practice). These principles are whakapiki tangata (enhancement, empowerment, and enablement of a person or people), whakatuia (integration and interconnectedness), and mana Māori (Māori control, autonomy, and self-determination) (Durie, 1997). Herbert et al. (2018) implemented these principles in their study. Examples include “privileging face-to-face contact with participants as well as encouraging participants to query any aspects of the research topic and proposed processes to support Māori control over the research, accountability by the researchers, and protection of knowledge generated from this study”(p. 21). I intend to leverage off these examples also.

One key difference between KMR and Māori-Centred research is, the dual-accountability and control over the research project and its outcomes (Cunningham, 2000). KMR is undertaken predominately by Māori for the benefit of Māori; with emphasis not only on how research is carried out but the effect it has on those it is being carried out for (Baker, 2009). Cunningham (2000) explains that with Māori-centred research these dual-accountabilities and control can have competing interests.

The primary reason for employing Māori-centred research is that some of the research activities in this thesis required non-Māori involvement, and, to a certain extent, approval. An example is the co-design of the holistic assessment tool in Chapter 5. The co-design nature of the tool required input from both Māori and non-Māori services, with many of these services required to achieve Ministry of Health directed outcomes. Although these services have great intentions and desire to support Māori health outcomes, they are obligated to meet their own deliverables and targets, sometimes in direct contrast to Māori expectations and/or aspirations.

2.7 My position as the researcher

Earlier in this section I explained that I would address two fundamental features highlighted by Smith (2015), these were my underlying theories and assumptions of the world, and how I position myself in the world. I have touched on these points in relation to the different theoretical perspectives presented above. However, the most significant point that reflects my position as researcher, is that I expect this research to be transformative, to produce positive outcomes for Māori, to intervene in existing health inequities and provide both knowledge and outcomes to inform answers to questions that we believe are important. My goal, by drawing on the paradigms outlined above is to highlight the inequities of Māori maternal and infant health, by validating and legitimating the experience of Māori and potentially providing a platform for whānau, service and system transformational change.

2.8 Research Methods and Activities

A variety of research activities were undertaken, each with a specific purpose aligning to the methodology, aims and research questions of the thesis. Overall, this thesis was an observational study, aligning to the definition provided by the National Ethics Advisory Committee (2012b) stating, "observational studies are distinguished from intervention or experimental studies as no intervention other than recording, classifying, counting and analysing of data takes place" (p. 3). One research activity employed in the study, which I will discuss below, could have been considered an intervention research activity; the development and implementation of a 'co-designed' holistic assessment tool. However, the defining characteristic of an intervention is to intentionally alter peoples care or services (National Ethics Advisory Committee, 2012a), which I will not be doing. All participants of the Whirihia Te Korowai Aroha service received the same quality of care, regardless of whether they participated in the research or not, therefore no intervention took place.

2.8.1 Methods

The use of qualitative research methods, specifically in health-related research, has gained both popularity and credibility amongst a number of scholars (Creswell & Poth, 2017; Denzin & Lincoln, 2005; Lewis, 2015; Rice & Ezzy, 2000). Hastie and Hay (2012) explain that qualitative research is "…about exploring issues, understanding phenomena and answering particular types of research questions" (p. 92). Palmer et al's (2019) systematic review centred on Māori consumer experiences of health systems and programs in qualitative research, explained that, "qualitative studies can offer critical insights into the ways that researchers view and conceptualise the patient experience and how those experiences are problematised as a basis for interventions to improve health outcomes" (pp. 2). Other advantages of using qualitative methods in health research include, the ability to answer questions that quantitative research cannot, to provide insights into attitudes, values, and beliefs of both lay and professional health experiences, and give due emphasis to the meanings, experiences, and views of research participants (Pope & Mays, 1995). Although concerns of subjectivity and lack of objectivity have been raised by both supporters, and opponents, of qualitative research (Ratner, 2002), strategies to address these concerns have been documented by scholars such as Anderson (2010), Denzin and Lincoln (2005), and Malterud (2001). Qualitative research methods align to the aims and objectives of this project, such as providing insight into the lived realities and experiences of māmā hapū, a crucial component of this research project.

Quantitative research methods were frequently used as the dominant research method in biomedical and clinical health research, however limitations began to be highlighted (Pope & Mays, 1995). These limitations became more prominent and over the last few decades, as the scope of health expanded significantly within health literature. The scope began to cover a range of areas including "physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2019, p. 1). This scope of health began to align with Indigenous concepts of health (Durie, 2004). Given the refocus of health, it is clear that as health service provision must expand, so too must health research techniques.

Given the complexities of this research project I utilised a mixed methods approach, a combination of both qualitative and quantitative research methods. As Johnson et al. (2007) state, the broad purpose of mixed methods research is to increase the "breadth and depth of understanding and corroboration" (p. 123). One of the key advantages of mixed methods research noted by Creswell et al. (2011) is that it provides more evidence for answering a research problem than either qualitative or quantitative approaches could provide alone (Lovett et al, 2020). Pope and Mays (1995) add that, one should not be seen as superior to the other as they each have different roles, but when used together can be valuable. Although the points noted above are beneficial for this study, Sale et al. (2002) caution researchers intending to use mixed methods, that the two methods cannot be combined for cross-validation or triangulation purposes, but rather combined for complementary purposes. Rewi and Hastie (2021) used a mixed methods approach to explore the "…understanding [of] Rāhui[3] as a means of decreasing the possibility of negative impacts for their mostly Māori population, during the Covid-19 pandemic that was experienced in March 2020 in Aotearoa New Zealand" (pp. 65). This approach contributed to the studies' positive research implications on health services. Subsequently, the study facilitated greater understanding of Te Ao Māori to non-Māori audiences.

Based on these reasons, and those cited previously, I utilise a mix methods approach, primarily focused on qualitative methods, and use quantitative methods to complement findings.

2.8.2 Research activities

This research project has four distinct research activities: a systematic review; a mixed-method interpretive study; an autoethnographic reflective account of the co-design process of the Whirihia holistic assessment tool; and a cohort study. These activities are discussed in detail below.

Chapter 3 was a systematic review investigating the prioritisation and involvement of Indigenous Peoples in antenatal education. Using the 2009 PRSIMA guidelines protocol, we systematically searched five electronic databases for primary research papers on antenatal education classes within Aotearoa, Australia, Canada, and the United States.

The results of the search identified n=5796 records in the EBSCOhost, ProQuest Central, PubMed and PubMed Central (PMC) databases, with a further two identified from Google Scholar. After removing the duplicates there were n=2145 initial records. A screening of each record was undertaken of the title and abstract with n=1842 records excluded and n=303 articles identified as potentially eligible for inclusion. The n=303 full-text articles were then assessed for eligibility and n=286 studies were

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[3] A conservation measure shrouded in tapu designed to limit, restrict or prevent access to the natural environment.

excluded with reasons. This yielded n=17 papers considered eligible for inclusion in this review.

The n=17 studies included comprised of, n=8 from the United States, n=5 from Australia, n=3 from Canada, and n=1 from Aotearoa. A socio-critical lens was then applied to the qualitative meta-synthesis to determine the extent of Indigenous Peoples prioritisation and involvement in antenatal education classes, and to understand the experience of Indigenous Peoples from these countries in antenatal education classes.

Chapter 4 was a mixed-method interpretive study that used retrospective post-course survey data of 1,152 participants over a three-year period from the Kaupapa Māori childbirth education programme Hapū Wānanga. The 'by Māori, for Māori' pregnancy and parenting initiative is based in the Waikato District Health Board region in Aotearoa. This chapter interrogated the factors that shape participation, engagement, and acceptability of the Hapū Wānanga programme for participants. The post-course survey data explored the following three areas.

First, the programme quality. The programme quality questions were presented to participants using a visual representation of emojis and corresponding headings, ranging from an "awesome" smiling face, to a "not good" unhappy face. Participants were asked to rate the following five areas, facilitator, guest speakers, venue, kai, and resources.

Second, the impact on levels of knowledge and understanding. A dependent *t*. test statistical analysis of quantitative data was conducted for each of the seven topics covered in the Hapū Wānanga post-course survey. These topics were, maternity care and your rights, healthy kai during pregnancy, what to expect in labour and birth, smoking, drugs, and alcohol in pregnancy, feeding your baby, childhood immunisations, safe sleep practices, and sex/sexual/contraception. The *t*-test was conducted on māmā hapū survey responses, to determine if there was a significant difference in knowledge at the beginning and end of the Hapū Wānanga programme. Results from the *t*. test determined if the following null hypothesis is accepted or rejected; Null hypothesis: There is no significant difference in knowledge before and after the HW.

Third, the overall experiences and views of participants. A thematic analysis centred on Te Ao Māori using a strengths-based approach, grounded analysis of the qualitative data. The focus of this approach, sought to portray participants' viewpoint within a culturally appropriate paradigm, amplifying the experiences and voices of Hapū Wānanga participants.

Chapter 5 was an autoethnographic reflective account of the co-design process of the Whirihia holistic assessment tool for the Kaupapa Māori antenatal wānanga- Whirihia Te Korowai Aroha. Using the He Pikinga Waiora Implementation framework (HPW) as a guide to 'co-design', the process documented reflections aligning to the principles of the HPW, resulting in the development and implementation of the Whirihia holistic assessment tool (Whirihia tool). The Whirihia tool provides a quality health needs assessment pathway for māmā hapū and their whānau.

Using data collected from comprehensive field notes, observations, and formal and informal hui (meeting) records, I provide an insight into the intricacies of a co-design process, weaving multiple layers of personal and cultural aspects into the story I tell of the Whirihia tool's development and implementation. While not a panacea for 'co-design', it is hoped that the reflective account affords some guidance to fellow emerging researchers who wish to support communities and organisations to implement health initiatives within their respective Māori (and non-Māori) communities.

Chapter 6 was a cohort study extending on the findings from the co-designed Whirihia tool. The cohort study undertaken in chapter 6 followed seven hapū māmā over a 10-month period. Cohort studies are a type of longitudinal study (Barrett & Nobel, 2019) and typically have large numbers of participants (National Ethics Advisory Committee, 2012). However, there are emerging studies with small cohort numbers, such as Oetzel et al (2020) with two cohort groups of n=8 and n=12 participants. Cohort studies are well suited to evaluating a variety of outcomes from a single exposure (Riffenburgh & Gillen, 2020). Aligning to the research aims, a cohort study used in chapter 6 explored the experiences of māmā hapū and their interactions with health and social services immediately after Aotearoa's first Covid-19 lockdown in March 2020. 17 participants completed the Whirihia tool with a subsequent seven māmā participating in a semi-structured, open-ended telephone interview. The ages of māmā participating in the semi-structured interview varied with one māmā aged between 14 to 18 years, three aged between 19 to 25 years, one between 26 to 30 years, and two between 31 to 35 years. Three māmā had previous tamariki (children) whilst four māmā reported this as their first pēpi (baby). Six of the participants resided in areas with a deprivation index of 9 and 10[4].

There were three data collection phases, however chapter 6 focused on phase three. The first data collection phase occurred in November 2019. Māmā hapū from the Whirihia wānanga were invited complete Whirihia tool.

The second phase involved completion of an electronic survey via a Qualtrics link in June 2020. A text message was sent to participants inviting them to participate in phase two and three. The survey asked participants to recall the services they had requested referral into from the Whirihia antenatal class. The survey then asked participants to provide a brief outline of the positive and negative experiences of engaging with any health and social services, since the Whirihia antenatal class in November 2019. Responses from the survey were combined with open-ended questions to develop tailored talking points for the third data collection phase.

The third data collection phase involved telephone interviews. The original intent was to undertake kanohi ki to kanohi (face to face) interviews with participants, a method of engagement is highly valued in Kaupapa Māori research practices, to support the continuity of building rapport and relationships with participants. However, the impact of Covid-19 created a state of uncertainty and fear and as both a researcher and a mama (mother), I did not want to pose any health risk to participants. Therefore, phone interviews was deemed most appropriate.

The interviews ranged in length from 25 minutes to 55 minutes. The intentional design of tailored questions, based on individual survey responses, shaped the semi-structured interview questions. The tailored questions allowed participants to describe characteristics of their interactions with specific health and social services, that in turn shaped either a positive or negative experience. These semi-structured questions allowed for issues to be explored as they arose and enabled the conversation to progress naturally rather than being a rigid, structured process. Interview notes were

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[4] (the number allocated to geographical location; 1 refers to levels of low deprivation and 10 refers to levels of high deprivation)

taken during, and at the conclusion of each interview, however due to resourcing issues from Covid-19 lockdowns, interviews could not be recorded. However, I embedded a comprehensive process of reflexivity during the interviews, which involved constant confirmation with participants, to confirm accurate interpretation of data.

2.9 References

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Chapter 3: Holistic antenatal education class interventions: a systematic review of the prioritisation and involvement of Indigenous Peoples' of Aotearoa New Zealand, Australia, Canada and the United States over a 10-year period 2008 to 2018

3.1 Preface

As highlighted in chapter 1, antenatal education has vast benefits for mothers, infants, wider family, and society as a whole. Indigenous Peoples of Aotearoa, Australia, Canada, and the United States experience poorer maternal health outcomes. Given the potential benefits of antenatal education programmes and need to support the improvement of Indigenous Peoples' health indicators, I undertook a systematic review to determine the extent to which Indigenous Peoples were prioritised, and involved, in antenatal education.

3.2 Article 1- Holistic antenatal education class interventions: a systematic review of the prioritisation and involvement of Indigenous Peoples' of Aotearoa New Zealand, Australia, Canada and the United States over a 10-year period 2008 to 2018[5]

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3.3 Abstract

3.3.1 Background:

Research into the effectiveness of antenatal education classes is crucial for Indigenous Peoples from Aotearoa New Zealand, Australia, Canada and the United States who experience poorer maternal and infant health outcomes compared to non-Indigenous populations. Our systematic review questions were intended to determine the extent of Indigenous Peoples prioritisation and involvement in antenatal education classes, and to understand the experience of Indigenous Peoples from these countries in antenatal education classes.

3.3.2 Methods:

Using a standardised protocol, we systematically searched five electronic databases for primary research papers on antenatal education classes within the four countries noted and identified 17 papers that met the criteria. We undertook a qualitative meta-synthesis using a socio-critical lens.

3.3.3 Results:

Systematic review of the academic literature demonstrates that Indigenous Peoples of Aotearoa New Zealand, Australia, Canada and the United States are not prioritised in antenatal education classes with only two of 17 studies identifying Indigenous participants. Within these two studies, Indigenous Peoples were underrepresented. As a result of poor engagement and low participation numbers of Indigenous Peoples in these antenatal education classes, it was not possible to understand the experiences of Indigenous Peoples.

3.3.4 Conclusion:

Given that Indigenous Peoples were absent from the majority of studies examined in this review, it is clear little consideration is afforded to the antenatal health needs and aspirations of Indigenous Peoples of Aotearoa New Zealand, Australia, Canada and the United States. To address the stark antenatal health inequities of Indigenous Peoples, targeted Indigenous interventions that consider culture, language, and wider aspects of holistic health must be privileged.

Trial registration: PROSPERO Registration ID: CRD42 02017 658

Keywords: Indigenous, Antenatal, Childbirth education, Pregnancy, Maternity, Māori, Aboriginal, First nations

3.4 Background

Antenatal care is an opportunity to provide important health-care functions such as medical, physical and educational interventions to expectant mothers [1]. Antenatal education is a core component of antenatal care. Maternal health and wellbeing impacts baby, in utero, after birth, and in future life course health [2–5] and in most developed countries, high quality antenatal education is prioritised to support these crucial life stages.

Childbirth education or antenatal education classes (AEC) aim to prepare prospective parents with skills and knowledge for childbirth and parenthood, in turn supporting improved health outcomes for mother and baby [6–9]. For the last three decades, antenatal education has attracted considerable attention within both practice and research [10–12]. AEC has been a widely accepted practice in many developed countries, particularly within Aotearoa New Zealand (thereafter Aotearoa), Australia, Canada, and the United States (US), though content and delivery style varies both amongst, and within, these countries [13].

In the four countries noted above, maternal and child health inequities between Indigenous Peoples and the dominant population group of the respective country are stark, with Indigenous Peoples experiencing significantly poorer maternal health outcomes [14–17]. The incidence of infant mortality, particularly Sudden Unexpected Death in Infancy (SUDI) which accounts for both explained and unexplained infant deaths, is significantly higher among Indigenous infants [18–20]. These Indigenous populations are also overrepresented in other negative infant health outcomes, such as; greater exposure to cigarette smoke and alcohol while in utero, have lower-birth-weight, higher rates of hospital admission for respiratory illnesses, and lower childhood immunisation rates [21, 22]. These health conditions highlight the need to focus efforts on the health and wellbeing of pregnant mothers during this important period.

Māori are the Indigenous Peoples of Aotearoa. In Canada, there are three Indigenous/Aboriginal groups recognised by the Constitution Act of 1982; First Nations, Inuit, and Métis [23, 24]. In the continental US, the Indigenous Peoples are known collectively as Native Americans and, in Alaska, the Indigenous Peoples are collectively known as Alaska Native [23]. In Hawaii, a State located approximately 2000 miles off the mainland of the US, Native Hawaiians are the Indigenous population recognised in the Native American Programs Act [25]. Aboriginal and Torres Strait Islander are the Indigenous Peoples of Australia. Each of the four Indigenous population groups have numerous sub tribes/groups, having their own distinct set of languages, histories, and cultural traditions [26]. "Canada, the United States, Australia, and New Zealand consistently place near the top of the United Nations Development Programme's Human Development Index (HDI) rankings, yet all have minority Indigenous populations with much poorer health and social conditions than non-Indigenous people" [27]. This is a clear breach of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and reflective of a lack of culturally appropriate and responsive initiatives, contributing to the growing health inequities for Indigenous Peoples [28].

3.4.1 Framework for health and wellbeing for Indigenous Peoples

In these same countries, programmes and research activities aimed to improve health outcomes have been largely focused on non-Indigenous, rather than Indigenous, understandings of health [23]. Within many Indigenous cultures health and wellbeing goes beyond a biomedical view and is more than the mere absence of illness or disease [29, 30]. Holistic models of health particularly resonate with Indigenous Peoples. Chakanyuka et al. [31] describe holistic health as;

> The vision most First Nations peoples articulate as they reflect upon their future. At the personal level this means each member enjoys health and wellness in body, mind, heart, and spirit. Within the family context, this means mutual support of each other. From a community perspective it means leadership committed to whole health, empowerment, sensitivity to interrelatedness of past, present, and future possibilities, and connected between cultures (p.82).

Holistic health is a concept echoed by King et al. [23] whereby they expand on how the four life elements, physical, emotional, mental, and spiritual, are privileged amongst Indigenous populations, and that all elements are intricately woven together and interact to support a strong and healthy person. Specific to Māori holistic and whānau-centred (family-centred) approaches have been integral to Māori conceptualisations of health and wellbeing [32]. While each of the Indigenous population groups have their own autonomy and sovereignty over their own health and wellbeing aspirations, they share a collective perspective of health that is intrinsically linked to culture and the environment [33–35].

Siloed health programmes are failing many Indigenous and minority peoples. As King et al. [23] explain, "services and support for health and social programmes are typically fragmented in Indigenous populations… Fragmentation results in the isolation of symptomatic issues—addiction, suicide, fetal alcohol syndrome, poor housing, and unemployment—followed by the design of stand-alone programmes to try to manage each issue separately" (p.83). As opposed to stand-alone programmes, holistic approaches aim to address numerous issues. These holistic approaches to health services align to Indigenous aspirations of health and can support the improvement of Indigenous health.

3.4.2 Colonisation and its impact on Indigenous birthing knowledge and practices

These four Indigenous population groups share a similar history of colonisation, with the negative impacts still being felt today [36]. Removal of land, the conscious, strategic and forcible loss of identity and culture, and validity of traditional knowledge, are some of the effects of colonisation [37] and each contributes to the inequities of Indigenous health and wellbeing [28].

In Canada, Brown et al. [38] explains that Indigenous Peoples were "…forced into dependency through a system of reserves, compulsory residential schools for children, and a series of policies that prevented the people from pursuing their traditional ways of living and supporting themselves" (p.103). In Australia, the Aboriginal people were "subjected to widespread dispossession, violence, and introduced diseases in the nineteenth century as Europeans took up large areas of country and forced Aboriginal communities onto missions and reserves" ([39] p.82).

In relation to childbirth knowledge, colonisation affected almost all aspects of Māori maternities [40]. Three major factors contributed to the disestablishment of traditional Māori pregnancy, birthing, and parenting, knowledge and practices. First, the introduction of the Western health system, specifically hospital births [41]; Second, the introduction of Western policies and legislations such as the Tohunga Suppression Act

[42]; and third, the assimilation of Western family hierarchical structures that ostracised the traditional role of wāhine (women) and tapu (sacredness) of the maternal body [43].

The introduction of hospitals and Western policies have also impacted the Indigenous Peoples of Canada with implementation of Health Canada's mandated 'birth evacuation policy', whereby "all pregnant First Nations and Inuit people (regardless of health risk) living on rural, remote and northern reserves leave their communities near the end of their third trimester and travel to urban hospitals to give birth" ([25] p.173). This policy undermines the voices, experiences, and knowledge of Indigenous women and is an ongoing example of "settler colonialism, white dominance, and national-patriarchy" ([25] p.184).

In contemporary times, AEC have become a prominent form of antenatal knowledge transmission in Aotearoa, Australia, Canada and the US [10]. Fabian et al. [12] attest that most health professionals recommend AEC to most expectant parents using the service. Indigenous Peoples, however, have lower rates of attendance at AEC [44]. Gagnon and Sandall [13] note that AEC have replaced previous Indigenous forms of knowledge transmission. "The existence of structured education in preparation for childbirth and parenthood has come about as traditional methods of information sharing have declined" (p.3).

Nolan and Hicks [11] proclaim AEC aims to create a "cohesive network amongst class members to enable them to support each other through the transition to parenthood. In this way, classes attempt to recreate the support which women traditionally found within extended families and local communities" (p. 186). AEC are firmly grounded in a social model of support for parents during pregnancy and the postnatal period [11]. Social support, assessment, and education are core programme components of Centering Pregnancy, an example of an AEC [45].

AEC are a significant cost to maternity services requiring careful evaluation [9]. Recently the effectiveness of AEC has come into question, with mixed findings on whether AEC have any impact on labour and birthing outcomes [9, 12, 46, 47] or effect on obstetric and psycho-social outcomes [10]. Nolan and Hicks [11] have stressed that antenatal education's survival is "dependant upon its being perceived and evaluated as a broad educational intervention and not as an obstetric one. Its effectiveness needs to be audited according to educational criteria and not clinical" (p. 187). Gagnon and Sandall's [13] review of studies demonstrated there is a wide spectrum of antenatal education, including variants on what education or information is delivered, how it is delivered, and to whom it is delivered.

AEC can vary in delivery mode, ranging from large lecture style classes, small classes, internet-based programmes, or one on one sessions [13]. The information taught also varies and can include topics about pregnancy, labour, birth, and parenting. Buultjens et al. [48] highlights the limited research investigating perceptions of the educational content currently communicated in antenatal service provision, resulting in inconsistency of AEC delivery.

Gagnon and Sandall [13] found AEC on offer typically attracted attendees who were "well educated women in the middle-to-upper socio-economic strata" (p. 4). Deebsossa and Kane's [49] analysis of prenatal classes found "the content and messaging of these classes appears to have contributed to a societal tendency to make pregnant women, especially poor women and women of color, invisible…" (p. 380). Fabian et al. [12] suggest future research "should focus on current forms of antenatal education, with special focus on women of low socioeconomic status" (p.436).

AEC are considered an important opportunity to support positive antenatal health outcomes [11, 50, 51]. Maternal and infant health outcomes are statistically worse for Indigenous Peoples in Aotearoa, Australia, Canada and the US. Given the potential of Indigenous frameworks to enhance health and wellbeing to address antenatal inequities, and the legal and moral obligations to uphold Indigenous Peoples health sovereignty within these four countries, the expectation that Indigenous frameworks would at a minimum, be present in AEC classes is warranted. The colonial history of these Indigenous populations influences inequities of outcomes and drives how health systems are designed and delivered. AEC have replaced a traditional maternity system and have remained the dominant form of antenatal education transmission post colonisation, though delivery mode and content varies. Therefore, this paper provides the results of a systematic literature review to determine what extent Indigenous Peoples are prioritised and involved in antenatal education classes in Aotearoa, Australia, Canada, and US. Further, to understand the experience of Indigenous Peoples from these countries in antenatal education classes.

3.5 Methods

Our team employed a qualitative meta-synthesis method to undertake this systematic review using a socio-critical lens. This socio-critical perspective acknowledges the environmental, social, cultural determinants of health, critique and social justice [52] and aligns to studies involving respondents' perspectives and broader experiences of healthcare [53]. Alongside our approach we conducted a systematic review following the PRISMA 2009 guidelines.

3.5.1 Search strategy

We used the PRISMA protocol to search the following databases: EBSCOhost, ProQuest Central, PubMed, PubMed Central (PMC), and Google Scholar search. For the purposes of this review, antenatal education classes (AEC) are defined as, 'an organised and structured intervention delivering pregnancy related information and education on different health topics/areas'. Across and within countries, AEC can have interchangeable names therefore the following search terms were used: "antenatal education" OR "prenatal education" OR "antenatal classes" OR "prenatal classes" OR "birth preparation" OR "childbirth classes" $n = 3291$. We then added the following search terms; AND Indigenous $n = 114$; AND Australia $n = 564$; AND New Zealand $n = 157$; AND United States $n = 950$; AND Canada n = 491; AND 'Maori' OR 'Aboriginal' OR 'First Nations' OR 'Native' $n = 229$.

3.5.2 Inclusion and exclusion criteria

Inclusion criteria were: 1) qualitative or mixed-methods studies based in Aotearoa New Zealand, Australia, Canada or the United States; 2) a primary focus or objective on an antenatal education class/intervention with a holistic focus; and 3) participants were end-users of intervention.

Exclusion criteria were: 1) non-English language studies; 2) published outside of the selection period between January 2008 and December 2018; and 3) studies that were resources for health professionals such as childbirth educators or nurses.

3.5.3 Study selection

Title and abstracts of records identified from database and individual journal searches were screened, and articles not meeting the eligibility criteria were excluded. The full text of potentially eligible papers was reviewed, and only those meeting the eligibility criteria were included in the review.

3.5.4 Risk of bias in individual studies

The methods, data quality, study context and other risks of bias in each eligible paper were assessed to ascertain their validity. Papers at risk of bias were identified, and their potential impact on the results was assessed.

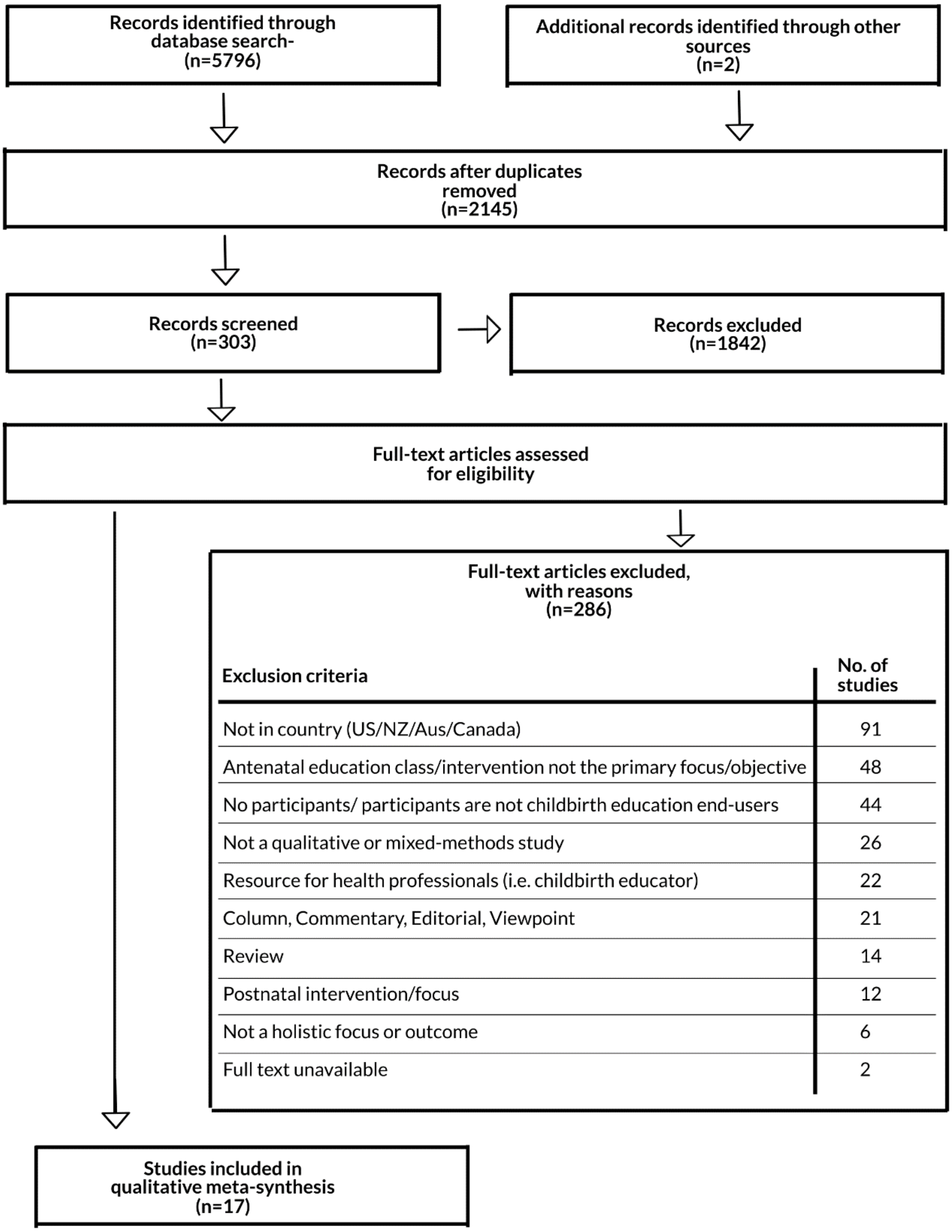
Two publications were identified as being the same study but published in two different journals with subtle changes. The authors agreed that though they were similar they were included in the final selection and that if there was any impact on results this would be identified in the Results section of this article.

3.5.5 Analysis

We applied a socio-critical lens to the qualitative metasynthesis. Our team undertook an independent analytical process lead by the first author; followed by robust collaborative discussions with remaining authors. From these discussions we were able to identify key themes relevant to our research questions.

3.6 Results

The searches identified 5796 records in the EBSCOhost, ProQuest Central, PubMed and PubMed Central (PMC) databases, with a further two identified from Google Scholar (Fig. 1). After removing the duplicates there were 2145 initial records. A screening of each record was undertaken of the title and abstract with 1842 records excluded and 303 articles identified as potentially eligible for inclusion. The 303 full-text articles were then assessed for eligibility and 286 studies were excluded with reasons (Fig. 1). This yielded 17 papers considered eligible for inclusion in this review.



Exclusion criteria	No. of studies
Not in country (US/NZ/Aus/Canada)	91
Antenatal education class/intervention not the primary focus/objective	48
No participants/ participants are not childbirth education end-users	44
Not a qualitative or mixed-methods study	26
Resource for health professionals (i.e. childbirth educator)	22
Column, Commentary, Editorial, Viewpoint	21
Review	14
Postnatal intervention/focus	12
Not a holistic focus or outcome	6
Full text unavailable	2

Figure 2- PRISMA flow chart study inclusion

Table 1 is a summary of the 17 studies included in this review. In relation to our first review question, determine the extent of Indigenous Peoples prioritisation and involvement in antenatal education classes, we present first the results of how many studies recorded ethnicity data, and then identify which of those studies included Indigenous Peoples as participants. Of the reviewed manuscripts only nine of the 17 studies fully identified participants' ethnicity. Two studies partially identified participants' ethnicity describing their participants as "mostly Anglo-Australian" [54, 55]. The remaining six studies had no mention of participant ethnicity. Five studies had no involvement of Indigenous participants and it is unclear whether Indigenous participants were involved in 10 of the 17 studies. Consequently, only two studies definitively included Indigenous participants with both studies based in the United States.

Of the two studies where Indigenous Peoples were participants of AEC, American Indian made up 12% (n = 3) of total participants in one study [62]; whilst American Indian/Alaska Native made up 9% (n = 3) of total participants in the second study [66]. Our second review question was to understand the experience of Indigenous Peoples from these countries in AEC. Within these two studies the sample size of Indigenous Peoples was less than a quarter of the participant numbers. As a result of poor engagement of Indigenous Peoples in these AEC it was not possible to understand their experience of AEC.

Table 1- Summary of studies included in qualitative meta-synthesis

Author/s	*Aim*	*Intervention/s*	*Research Approach*		*Participants*			*Country*	*Findings*
			Methodology/ Theoretical perspective	*Methods*	*No.*	*Ethnicity of participants identified?**	*Indigenous Peoples included?*		
Ateah (54)	*Determine first-time expectant parents' perceptions of a parent education intervention, their education needs, and preferred sources and modes of such education.*	*1hr in-person session carried out during the last class of a public health prenatal education series.*	*Quantitative study with some open-ended questions*	*Questionnaire*	*n=16 women* *n=15 men*	Unknown	Unknown	United States	*Most participants in study found content useful, planned to use it in caring for their infant, and indicated this information should be shared with all expectant mothers.*

Auger et al. (55)	*Examine the effectiveness of a participatory prenatal education program for low-income Latinas.*	*Group intervention with three components, 1) use of photonovels, 2) participatory education, and 3) lay educator model.*	*Community-based participatory research approach*	*Surveys, focus groups, medical records*	*n=43*	*Fully (Latinas)*	*No*	*United States*	*Participants showed a significant increase in knowledge and confidence and reported an increase in social support, a deeper understanding of information, greater engagement, and behaviour change.*
Bourget et al. (56)	*The development and evaluation of an educational intervention that aimed to promote the development of a sense of mastery of anticipated of the anticipated paternal role in soon-to-be fathers.*	*4 educational sessions delivered to expectant fathers attending prenatal classes.*	*Preventive role supplementation conceptual framework*	*Questionnaire*	*n=6*	*Unknown*	*Unknown*	*Canada*	*Participants highly appreciated the content and format of the educational intervention, developing a sense of mastery of the anticipated paternal role.*
Broussard and Broussard (57)	*Evaluate the Resource Center for Young Parents-To-Be project.*	*Six lessons for resource center young parents-to-be project.*	*Qualitative evaluation*	*Questionnaire*	*Unknown*	*Unknown*	*Unknown*	*United States*	*The adolescents who have attended have given the resource center and the nursing students high marks.*

Fisher et al. (58)	Experiences of expectant mothers and their birth support partners participation in Mindfulness-based Child Birth education.	Mindfulness-based Child Birth education class.	Pedagogical approach	Focus group	n=12 women n=7 birth support partners	Unknown	Unknown	Australia	A sense of both 'empowerment' and 'community' were the essences of the experiences of MBCE for all participants.
Fitzgerald et al. (59)	Seek a better understanding of needs and access issues among pregnant low-income Hispanic women who attended a community prenatal education program.	Community prenatal education program.	Phenomenological inquiry	Focus groups	n=8	Fully (Hispanic)	No	United States	Adequate and culturally appropriate health care services to pregnant Hispanic women in the greater Louisville metropolitan area is still lacking.

Gambrel and Piercy (60)	*Understand the lived experiences of participants in the Mindful Transition to Parenthood Program.*	*4-week Mindful Transition to Parenthood Program.*	*Phenomenological inquiry*	*Semi-structured interviews*	*n=26 (13x couples)*	*Fully* *(Caucasian and* *non-Hispanic, American Indian and Caucasian, Latino, Asian American,* *other, did not answer)*	*Yes*	*United States*	*Participants stated that the programme increased their acceptance and awareness, deeper connections with their partners, and led them to be more confident about becoming parents.*
Gentles et al. (61)	*Evaluate the TAPUAKI programme for the effectiveness and delivery of its curriculum to* *pregnant mothers.*	*TAPUAKI pregnancy and parenting programme.*	*Pacific talanoa methodological design. Qualitative thematic analysis .*	*Survey questionnaires, focus group interviews*	*n=13*	*Fully* *(Samoan, Tongan, Cook Islands Māori)*	*No*	*New Zealand*	*Participants reported that their knowledge about pregnancy and parenting had increased as a result of the programme, with women responding positively and feeling a benefit through attending.*

Koehn (62)	*Describe and understand contemporary childbearing women's perceptions of the role of childbirth education in preparing for birth.*	*Childbirth preparation class.*	*Grounded theory*	*Open-ended interviews*	*n=9*	*Fully* *(Caucasian)*	*No*	*United States*	*Participant's narratives support a relationship between childbirth education and readiness for the childbirth experience.*
Levett et al. (63)	*Gain insight into the experiences of women, partners and midwives who participated in the Complementary Therapies for Labour and Birth Study, an evidence based complementary medicine (CM) antenatal education course.*	*Complementary medicine antenatal education course.*	*Qualitative Study*	*In-depth interviews, focus group*	*n=13*	*Fully* *(Caucasian, Asian)*	*No*	*Australia*	*Women used information about normal birth physiology from the course to make sense of labour, and to utilise the CM techniques to support normal birth and reduce interventions in labour. Women's, partners' and midwives' experience of the course and its use during birth gave rise to supporting themes such as: working for normal; having a toolkit; and finding what works.*

Liu et al. (64)	Examine how the CenteringPregnancy, a model of group prenatal care and childbirth education, influenced the birth experience of immigrant and minority women.	CenteringPregnancy group prenatal care and childbirth education.	Thematic analysis	In-depth interviews, surveys	n=34	Fully (American Indian/Alaska Native, African American, Latina, White, Multi-racial)	Yes	United States	Participation in CenteringPregnancy model successfully equipped participants with a variety of pain and copping methods. Women reported high levels of satisfaction with their birth experiences.
Mackert et al. (65)	Explore the use of an e-health application to educate men about pregnancy-related health.	E-health application.	Qualitative study	Semi-structured interviews	n=23	Fully (White, Hispanic, Asian, multiracial or other, Black)	Unknown	United States	The overwhelming positive reactions of participants both to the health issue, content, and design of the intervention is promising.

McNeil et al. (66)	*Understand the central meaning of the experience of group prenatal care for women who participated in CenteringPregnancy; a forum for women to experience medical care and child birth education simultaneously and in a group setting.*	*Group prenatal care: forum for women to experience medical care and child birth education simultaneously.*	*Phenomenological approach*	*One-on-one interviews and/or group sessions*	*n=12*	*Fully* *(Non-Caucasian)*	*Unknown*	*Canada*	*The central meaning of the experience of group prenatal care for women in this study was getting more than they realized they needed, with women gaining more from group prenatal care than from individual care.*
Munro et al. (67)	*Explore women's preferences for a prenatal education program by text messaging.*	*SmartMom mHealth program for prenatal education.*	*Formative qualitative evaluation*	*Questionnaire, focus groups*	*n=40*	*Unknown*	*Unknown*	*Canada*	*Participants perceived SmartMom to be highly acceptable and relevant for childbearing Canadian women.*
Nash (68)	*To examine how first-time fathers in rural Tasmania experienced father-only antenatal support/education groups.*	*Two classes, 1) government health service not-for-profit and 2) private company men's antenatal education classes in a pub.*	*Masculinity*	*Semi-structured interviews*	*n=25*	*Partially* *(Most Anglo-Australian)*	*Unknown*	*Australia*	*Father-only groups can be improved by accounting for multiple and complex constructions of masculinity, increasing the number of sessions offered and altering the structure to suit the audience.*

Nash (69)	*Explore how a cohort of 25 first-time fathers experienced 2 different father only antenatal support/education groups.*	*Two father-only antenatal support/education groups; 1) GBADC AND 2) Bubs and Pubs.*	*Masculinity*	*Semi-structured interviews*	*n=25*	*Partially* *(Most Anglo-Australian)*	*Unknown*	*Australia*	*Antenatal education-support programs in Tasmanian fail to recognize the multiple, complex constructions of masculinity that characterize the current generation of expectant fathers. Father only programs can be improved by increasing the number of sessions offered and by altering the structure.*

Spicer (70)	*Interpret and understand how antenatal education, both with and without hypnosis, impacted a mother's birthing experience.*	*Two classes 1) Traditional antenatal education and antenatal education with the inclusion of hypnosis.*	*Hermeneutic phenomenological and interpretive approach.*	*Interview*	*n=12*	*Unknown*	*Unknown*	*Australia*	*Antenatal education affects the ability of both mother and partner to manage labour and childbirth to their perceived level of satisfaction. The inclusion of hypnosis in antenatal education provided mothers with a powerful and useful intervention.*

3.7 Discussion

This systematic review reveals that AEC in Aotearoa, Australia, Canada and US do not prioritise the engagement of, or experiences of, Indigenous Peoples with only two studies identifying Indigenous Peoples as participants. Furthermore, most of these studies paid no attention to ethnicity data collection and whether Indigenous Peoples were involved. The two studies that did collect ethnicity data were far from representative of the antenatal health inequities of each of the Indigenous population groups.

This review highlighted a lack of thought and consideration afforded to Indigenous Peoples of these countries. Indigenous Peoples' health perspectives, sovereignty, and self-determination, all of which are fundamental rights of Indigenous Peoples [71], were not evident in the reviewed papers. This lack of consideration meant there was an absence of data pertaining to our second review question, which was to understand the experience of Indigenous Peoples in AEC. In so saying, the absence of this data has identified important areas that need to be addressed in order to improve antenatal health inequities.

3.7.1 AEC need to collect quality ethnicity data

Identity is fundamental to Indigenous Peoples. Self identification is the right of all ethic-cultural groups, as Chiriboga [72] explains "…to be recognized as different; to maintain their characteristic culture and their cultural patrimony, both tangible and intangible; and not be forced to belong to a different culture or to be unwillingly assimilated by it" (p.45). Article 33 section 1 of the United Nations Declaration on the Rights of Indigenous Peoples [73], states that "Indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions" (p.10). Self-identification is the right to be counted [74] and asserting this right is shared by all Indigenous Peoples. This right was ignored in the AEC studies we canvassed. For Indigenous Peoples' identity is central to good health and this oversight is a key contributor to maternal and infant health inequities.

Reporting of quality ethnicity data was not consistent across all studies, with eight of the 17 studies collecting no or partial ethnicity data. Quality ethnicity data collection is needed to monitor ethnic inequities in health and social outcomes [75]. If it is not completed accurately or even included at all, this will impede strategic implementation of health initiatives that aim to reduce avoidable deaths [76]. This process of ethnicity data collection is especially important for Indigenous Peoples of colonised countries where leading government/crown/state entities have legal and moral obligations to uphold their rights [75]. Without collecting ethnicity data there is no way to monitor accountability of these entities nor whether health equity is achieved. Access to ethnicity data also permits sovereignty for Indigenous Peoples, to measure and monitor their own vital health statistics, to determine priorities and conduct strategic future planning.

3.7.2 AEC classes to benefit Indigenous Peoples

The majority of studies included in this review yielded positive responses from participants in relation to the AEC or intervention, however data on Indigenous experiences was not present in the manuscripts. There were three studies that targeted a specific ethnic group of peoples, each employing elements of culture and language in a manner that resonated with the intended participants. Findings from these studies showed participants highly valued and appreciated the respective interventions. This supports Laverack's [77] statement that people "want to participate [in health interventions] and will do so in large numbers if they are properly engaged and have a shared interest in the program" (p.3). This targeted approach received participant endorsement resulting in life changing knowledge and behaviours.

In contrast, a study conducted by Nguyen et al. [78] based in the United States on women from racial or ethnic minority and low socioeconomic backgrounds, concluded that "despite reporting higher levels of prenatal health education on a variety of health-related topics, disadvantaged women continue to experience disparities in adverse birth outcomes suggesting that education is insufficient in promoting positive behaviors and birth outcomes" (p. 157). The preceding quote validates the need for targeted health approaches for intended participants and that inadequate content and mode of delivery of AEC can increase maternal and infant health inequities.

Responsive AEC are needed for Indigenous Peoples to engage intended communities and achieve health equity. The urgency to prioritise Indigenous interventions is clear. "The inconsistent progress in the health and wellbeing of Indigenous populations over time, and relative to non-Indigenous populations, points to the need for further efforts to improve the social, economic, and physical health of Indigenous peoples" ([27] p.1). Context-specific and relational approaches that privilege local Indigenous knowledge are shown to be more responsive in achieving health equity. Fijal and Beagan's [79] literature synthesis of Indigenous perspectives on health found, "Indigenous knowledge and ways of life, Indigenous cultures, and Indigenous identities were all identified in the literature as critical to health and well-being…" (p. 220).

This review, albeit relatively brief compared to the depth of knowledge needed to understand the complexities and targeted approaches for each of the four Indigenous population groups (and their subgroups), highlights that Indigenous approaches share elements of commonality, resonating with one another. Hilgendorf et al. [80] goes further to iterate, "recent perspectives on Indigenous health have recognized language, culture, and values as central to well-being and recovery from historical trauma" (p.824). As health professionals and researchers, if the aim is to move beyond the exchange of knowledge and instead elicit behaviour change and empowerment, an approach that affects participants' identity, where a meaningful connection is made, is needed.

3.7.3 Barriers for publishing community health initiatives for Indigenous Peoples

This review highlights a lack of Indigenous focused AEC, however we acknowledge there are Indigenous led interventions within these countries, specifically regarding the revitalisation of traditional birthing practices [40, 43, 81]. There are several barriers and factors that may account for why interventions are not present in the literature. For many Indigenous communities publishing in scholarly journals may not be a priority or desire, or they lack support to share their findings on a global stage. Academic literature, specifically submission of articles into prestigious journals, is predominantly an activity for researchers, with many communities and health organisations focused on delivery of services rather than dissemination of findings in academic journals.

Indigenous researchers must navigate the complexities of academic processes that can at times be in direct opposition of Indigenous obligations [37, 82]. Publication is a familiar and encouraged process for Western scholars yet the constraints of publishing research data in journals is a barrier for many Indigenous researchers [83]. Tierney et al. [83] further argue that in some instances, non-Western scholars have undertaken processes to "accommodate or assimilate to Western standards" (p.296). Indigenous scholars must overcome the peculiarities of Western academia, including having to continuously defend and validate Indigenous knowledge [84, 85] whilst navigating the obligations of being first and foremost, an Indigenous person. In relation to Indigenous birthing revitalisation, there are several Indigenous scholars actively working in this academic space such as Simmonds [86], Moewaka Barnes et al. [2], Gabel [87] from Aotearoa. Indigenous researchers can overcome these challenges however it is an added complexity that contributes to the dominated Western studies.

3.7.4 Strengths and limitations

Acknowledged above, much work that Indigenous health professionals are conducting in their communities is not published in academic sources or may have been excluded due to the limitations of a systematic review. Our team have found sources that show there is knowledge and experience surrounding traditional Indigenous maternity systems that was absent from the published literature, confirming that a wider body of anecdotal and grey literature exists [88].

3.8 Conclusion

Indigenous Peoples of Aotearoa, Australia, Canada and US are not prioritised in antenatal education research, with only two of 17 studies identifying Indigenous participants. Of these two studies, Indigenous Peoples made up less than one quarter of participants. As a result of poor engagement and low participation numbers of Indigenous Peoples in these antenatal education classes it was not possible to understand the experience of Indigenous Peoples from these countries.

The absence of Indigenous Peoples' data highlights a lack of consideration from both the researchers and developers of antenatal education classes, and subsequently, the rights of Indigenous Peoples' health and sovereignty. The fundamental right for Indigenous Peoples to self-identification was severely lacking with six of the 17 studies disregarding the right to self-identification. Neglecting this process negatively impacts Indigenous Peoples as Durie [89] exclaims, "a secure Māori cultural identity is central to good health" (p. 189). The absence of identity in health stems from a Western definition of health, which is at odds with Indigenous and holistic health perspectives. Collecting quality ethnicity data is an essential first step toward upholding the fundamental right of Indigenous Peoples' to be counted.

Of the studies analysed in this review, a need for cultural embeddedness rather than as an add-on was demonstrated by three of the studies, each with interventions that targeted a specific ethnic population. Those studies embedded elements such as identity, language, and a feedback loop from participants for the intervention to be strengthened. A dedicated commitment where the intervention designers do not see themselves as 'the expert' but genuinely valuing the expertise and knowledge of their participants. These elements align to Indigenous health models and provide a basis for authentic health intervention design.

To address the stark inequities of Indigenous Peoples antenatal health and wellbeing statistics, there is a clear need for more studies driven by Indigenous Peoples attending to Indigenous ways of knowing. This is not to say that Indigenous interventions are not being delivered for these priority communities, but instead highlights the lack of support and little emphasis for Indigenous knowledge in scholarly sources. Targeted Indigenous interventions that consider culture, language, and wider aspects of holistic health provide a solution moving forward. These solutions must be privileged.

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Authors' contributions

NB led the scoping review design, screening of data, data extraction, analysis of data, and drafting of the manuscript. LB and PAC were involved in the scoping review design, screening of data, data extraction, analysis of data and drafting of the manuscript. BMA was involved in the scoping review design and drafting of the manuscript. LTS was involved in the cultural oversight of the manuscript and data interpretation. All authors have read and approved the final manuscript.

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Not applicable.

Competing interests

The authors declare that they have no competing interests.

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[6] Appendix 1: Co-authorship form article 1 chapter 3

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Chapter 4: Hapū Wānanga: A Kaupapa Māori childbirth education class for Māori and non-Māori māmā hapū and whānau

4.1 Preface

The previous chapter found that Indigenous Peoples are not prioritised in antenatal education classes. Of the 17 studies included in the review, only two studies definitively included Indigenous Peoples as participants. The lack of poor engagement and low participation numbers meant it was not possible to understand the experiences of Indigenous Peoples in antenatal education classes.

The findings from chapter 3 highlighted there is a significant gap in academic literature focused on the experiences of Indigenous Peoples in antenatal education classes. This prompted a search of grey literature and non-academic sources to explore what antenatal education classes are available for Māori. The informal search revealed a series of Kaupapa Māori antenatal wānanga (education) operating throughout Aotearoa. The following chapter focuses on the Hapū Wānanga Kaupapa Māori antenatal education wānanga.

4.2 Article 2- Hapū Wānanga: A Kaupapa Māori childbirth education class for Māori and non-Māori māmā hapū and whānau[8]

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4.3 Abstract

Global studies attest that early engagement with childbirth education (CBE) classes enhances maternal and infant health outcomes. In Aotearoa New Zealand, Māori participation rates in CBE classes are lower than those of their non-Māori counterparts. Current CBE classes are designed and delivered using a predominantly Western medicalised approach that negates Māori birthing knowledge, expertise, and values. However, sporadically, Kaupapa Māori CBE classes are being delivered. This paper draws on a wider study that explores the Hapū Wānanga (HW) CBE programme, a by Māori, for Māori pregnancy and parenting initiative. This mixed-method interpretive study used retrospective post-course survey data of 1,152 participants over a three-year period from the HW based in the Waikato District Health Board region. Data explored the programme's quality, the impact on levels of knowledge and understanding, and the overall experiences and views of participants. This paper interrogates the factors that shaped participation, engagement, and acceptability of the HW for participants.

Keywords

antenatal education, childbirth, hapū, Kaupapa Māori

4.4 Introduction

There is a growing body of evidence showing a strong correlation between an individual's health while in utero, and their adolescent and adulthood health outcomes (Morton et al., 2022). Antenatal or childbirth education (CBE) classes aim to prepare prospective parents with skills and knowledge for childbirth and parenthood, in turn supporting greater health outcomes for mother and baby (Ahldén et al., 2012; Brixval et al., 2014; Detman et al., 2008; Ferguson et al., 2013; Kohen et al., 2002). These classes have become standard routine for pregnant women and their partners in the developed world (Brixval et al., 2014; Gagnon & Sandall, 2007).

A systematic review carried out by Gagnon and Sandall (2007) found that literature centred on antenatal education has focused predominantly on the impact these classes have on health and health behaviours. The authors also identified three areas that are lacking in current studies, requiring further exploration. First, most studies did not explore women's or partners' expectations and views in depth. Second, few explored whether what is taught in class meets the needs and expectations of attendees, and finally, there is a paucity of evidence for the best method of delivery of antenatal education (Gagnon & Sandall, 2007). These insights are needed to improve engagement with health services, thereby contributing to the service design and delivery, and potentially promoting improved health outcomes.

In Aotearoa New Zealand, Māori participation rates in CBE classes are lower than those of their non-Māori counterparts (Dwyer, 2009). Pihama (2011) explains that the majority of CBE classes offered lack Māori input in design and delivery, and argues that a Māori-led solution is needed to encourage Māori participation and engagement.

This paper explores responses from participants of the Hapū Wānanga (HW) pregnancy and parenting programme to understand factors that shape participation, engagement, and acceptability for Māori māmā hapū, wider whānau, and non-Māori participants.

4.4.1 Maternity

Aotearoa, like most developed countries, has identified a need for quality antenatal maternity care through the provision of free maternity services to eligible citizens and residents (Ministry of Health, 2021). However, Māori and many other Indigenous populations from colonised countries experience significantly more health disparities compared than their non-Indigenous counterparts (Bramley et al., 2005; Morrissey, 2003). Maternal and infant health is one area where Māori have poorer health outcomes. Colonisation is one contributing factor. Reid et al. (2017) explain that Indigenous Peoples dominate negative statistics of settler states and are significantly more likely to be overrepresented in poor health, lower levels of educational achievement, incarceration, abuse, and numerous other areas. "…Put simply, indigenous inhabitants typically live well below the median lines in all settler states" (p. 11).

Indigenous Peoples continue to experience negative health outcomes as a direct result of colonisation (Bourassa et al., 2004; Lavallee & Poole, 2010; Reading & Wien, 2009), and several influential scholars have stated that colonisation and poor health outcomes are still intrinsically linked (Pihama et al., 2017; Reid et al., 2017; Reid & Robson, 2007). According to Reid and Robson (2007), "it is impossible to understand Māori health status or intervene to improve it without understanding our colonial history" (p. 4).

Infant and maternal health outcomes are significantly poorer for Māori than for non-Māori, and colonisation has, and continues to have, an impact on said outcomes (Graham & Masters-Awatere, 2020).

Colonisation affected almost all aspects of Māori maternities (Simmonds & Gabel, 2016). Three major factors contributed to the disestablishment of traditional Māori pregnancy, birthing, and parenting, knowledge, and practices.

The first was the introduction of the Western health system and specifically hospital births. Documented by Clarke (2012) are accounts from colonisers on Māori birthing practices, specifically the differences in labour and birthing between Māori women and settlers. Clarke (2012) notes that colonisers were particularly impressed with Māori and their short recovery time after birth and use of plants and water to encourage the afterbirth. Yet this system that was working for Māori was ridiculed and replaced with Western systems, such as hospitals (Wepa & Te Huia, 2006). With the introduction and forced use of these hospitals, for both Māori and non-Māori wāhine (Stojanovic, 2008), home births (defined for these purposes as a location that is not a hospital such as a marae or whare) rapidly decreased for Māori (Simmonds & Gabel, 2016).

Second, the introduction of Western policies and legislations specifically affected Māori maternal and infant health practices. Arguably, the most damaging Act to pass through government, devastating pre-colonisation Māori labour, birthing, and parenting practices, was the Tohunga Suppression Act 1907, which "prohibited traditional healing practitioners who were also the principle [*sic*] repositories of cultural knowledge and practices" (Ware, 2014, p. 3). Ware (2014) states that "this outlawing of tribal repositories meant that Māori ways of teaching, learning, and transmitting knowledge were heavily restricted, including knowledge about pregnancy, birth and parenting" (p. 3). Validating mātauranga Māori (Hikuroa, 2017), and more specifically mātauranga-ā-whānau Māori knowledge transmitted intergenerationally (Lipsham, 2020) is still a struggle for many Māori to this day.

Finally, the marginalisation of the role of wāhine and tapu of the maternal body (Simmonds & Gabel, 2016) remains an issue. Prior to colonisation, Māori society had maternity systems in place; these systems included key people such as tohunga and key practices such as te reo Māori, mātauranga Māori, and spiritual knowledge and practices (Mikaere, 2003). Simmonds and Gabel (2016) explain how the state disregarded these systems, instead purposefully, and intentionally, attacking Māori maternities and replacing them with a system that to this day, privileges non-Māori cultural constructs.

Reid et al. (2017) highlight that historical events play a huge role in creating, and continuing, a colonising environment. While the three factors highlighted above provide insight into how Māori maternity knowledge and practices have been severely damaged by colonisation, scholars have identified other factors within the contemporary New Zealand health system that impede addressing Māori health needs.

Racism is a direct cause of poor Māori health outcomes (Came et al., 2019; Reid et al., 2019). Stevenson et al. (2016) found that Māori experience racism in various stages of their maternity journey. Maternity services use terms such as "vulnerable" and "high risk" (Pihama, 2011) to describe Māori, and labels such as "hard to reach", "do not engage", or "whakama" as reasons for non-engagement with services (Pihama, 2011; Wilson & Huntington, 2006). These labels ultimately place blame for non-engagement on the individual, and by extension, justify low Māori attendance rates. Pihama's (2011) *Overview of Māori Teen Pregnancy* demonstrates that these participants experience negative stigma when engaging with health services. As a result, Māori mothers are opting not to engage with services for "fear of being judged" or "told what to do" (Ellis, 1998; Haereroa, 2015). In other studies, researchers have found that Māori are more likely to present to antenatal services later in their pregnancy than their Pākehā counterparts (Hodgetts et al., 2004; Makowharemahihi et al., 2014; Pihama, 2011; Ratima & Crengle, 2013).

Rolleston et al. (2020) highlight that in Aotearoa dominating reasons for poor Māori health include a failure to acknowledge the consequences of colonisation and enduring health system failings. Global Indigenous and Māori scholars alike, emphasise that as a result of the deeply embedded colonial history, Indigenous solutions are needed to address issues that predominantly affect Indigenous Peoples.

4.4.2 Childbirth education classes

Universally, the intended purpose of CBE classes is to ensure expectant parents are provided with the necessary skills and knowledge to prepare for birth and parenting (Soriano-Vidal et al., 2018). In Aotearoa, participation in CBE classes is one milestone on the maternity spectrum that expectant parents are encouraged to complete. The

Ministry of Health oversee service specifications for DHB-funded maternity services, allowing DHB-funded CBE classes to be provided at no cost. Two early studies that focus primarily on CBE classes in Aotearoa, demonstrate that Māori participation rates in CBE classes are substantially lower than those of non-Māori. Ellis's (1998) case study states that only 30% of Māori attended CBE classes, while Dwyer's (2009) report on behalf of the Families Commission identified that only 10% of Māori attended CBE classes. Recent scholarly articles exploring the wider maternity spectrum also highlight a low response rate in CBE classes for Māori (Moewaka Barnes et al., 2013; Wylie et al., 2009).

As discussed in the previous section, Māori practices were abolished and replaced with Western structures and processes. Gagnon and Sandall (2007) explain how CBE classes have replaced previous Indigenous forms of knowledge transmission: "the existence of structured education in preparation for childbirth and parenthood has come about as traditional methods of information sharing have declined" (p. 3).

Gagnon and Sandall's (2007) research also found that the CBE courses offered, typically attracted attendees who were "well educated women in the middle-to-upper socio-economic strata" (p. 4). It is therefore assumed that women from the lower socio-economic strata typically do not access CBE classes. This is reflective of Aotearoa, where more than half of Māori live in areas considered among the most deprived in the country (Ministry of Health, 2015b). Specifically, in the Waikato District Health Board (DHB) region (where this study takes place) "two in five children and one in three adults in Māori … were in households with low equivalised household incomes (under $15,172)" (Robson et al., 2015, p. v). This is indicative of CBE classes in Aotearoa: Dwyer's (2009) study revealed that CBE participants were significantly more likely to have "a tertiary degree (one to four years), to be of New Zealand European ethnicity and to be earning $70,000 per year or more" (p. 84). Despite efforts to achieve equitable outcomes, maternity services and the New Zealand health system in general are not currently meeting the needs of Māori (Goodyear-Smith & Ashton, 2019).

Though a resurgence of traditional Māori birthing practices has been recognised in academic scholarship by the likes of Dr Naomi Simmonds, Professor Leonie Pihama, and Dr Aroha Yates, to name a few, and provided an insight into Māori birthing knowledge and expertise, little attention has been paid specifically to CBE classes that meet the aspirations of Māori attendees. Some international studies have indicated that antenatal programmes do not meet the needs of all intended participants (Liu et al., 2017; Nguyen et al., 2019). Gagnon and Sandall (2007) note that "typically these [CBE] programs have not been based on the expressed needs of attendees, but rather on the messages that the educators themselves believed they should impart" (p.3). Nguyen et al.'s (2019) study based in the United States on women from racial or ethnic minority and low socio-economic backgrounds concluded that "despite reporting higher levels of prenatal health education on a variety of health-related topics, disadvantaged women continue to experience disparities in adverse birth outcomes suggesting that education is insufficient in promoting positive behaviors and birth outcomes" (p. 157).

4.4.3 Delivery of CBE classes in Aotearoa

Prior to the recent introduction of the newly formed Te Whatu Ora Health New Zealand, CBE programmes funded by the Ministry of Health were managed through the individual DHB. DHBs were responsible for the commissioning, funding, and monitoring of both hospital and primary care services (Ministry of Health, 2022). Specifically to the Waikato DHB, CBE services were provided by a Waikato DHB service provider arm (HW) and community health providers, underpinned by the mandatory *Maternity Services - DHB Funded - Pregnancy and Parenting Information and Education Tier Level Two Service Specification* framework (Ministry of Health, 2015a).

The intended outcomes of CBE classes are to enhance maternal and infant health outcomes. Based on participation rates, CBE classes have a much higher success rate for non-Māori than for Māori. Current studies demonstrate that Māori participation rates are low and those Māori that do engage have an undesirable experience that amounts to little or no transformational change. Pihama (2011) and Moewaka Barnes et al. (2013) concur that a Māori-led solution is needed to achieve equitable maternal and infant health outcomes. Designing and delivering responsive CBE classes is a matter of urgency.

4.4.4 Kaupapa Māori

The definition of Kaupapa Māori has become a topic of deliberation for academics, health practitioners, educators, and the community alike. At its core, Kaupapa Māori is a "philosophy most often expressed in the delivery of culturally appropriate and relevant services to Māori in the education, health, and welfare sectors. These services are colloquially referred to as "by Māori, for Māori" (Eketone, 2008, p. 1). As well as a "by Māori, for Māori" premise, according to Durie (2001) Kaupapa Māori healthcare initiatives should also include the following: the incorporation of tikanga Māori; the involvement of whānau, hapū, and iwi in all aspects of the service, including treatment; the use of traditional Māori healing practices; and the provision of cultural assessment cultural practices and whakawhanaungatanga (p. 227).

Hapū Wānanga is a free Kaupapa Māori pregnancy and parenting course that aims to provide participants with quality information to make informed choices (Waikato DHB, 2019). At the time this study was conducted, the facilitators were both Māori, each holding health and education qualifications. In this paper the term hapū refers to a "pregnant woman". In Te Ao Māori hapū is a sacred time and woman should be treated accordingly. According to Mahuika and Mahuika (2020) "wānanga is a traditional method of Māori knowledge transmission… [it] is a dynamic living tradition that has developed across generations" (p. 369). Combining traditional Māori birthing practices and knowledge for a contemporary context, HW aims to inform, inspire, and empower whānau to make informed decisions.

The HW initiative has several characteristics aligning with the "by Māori, for Māori" criteria of Kaupapa Māori (Smith, 1999). The incorporation of tikanga is evident throughout the programme. Practices such as whakatau, karakia, and waiata are examples used within the programme. Whānau participation is encouraged, and facilitators leverage off the experiences' of whānau participants, if appropriate, throughout the wānanga. Te reo Māori and customs are actively used to connect with and accommodate the various participants.

Another feature of HW is the purposeful inclusion of guest speakers, providing an opportunity for health and social support services to connect with wāhine and whānau in an environment where whānau feel comfortable. This additional feature is unique to HW and embedded to help address issues of access to health services. This holistic approach aligns with Kaupapa Māori aims by recognising that whānau not only have a right to health services but also have the right to choose whether or not they wish to engage in those health services (Durie, 1998; Moewaka Barnes et al., 2013).

Although HW was designed, developed, and implemented by Māori, it is a government-funded programme, which can challenge the by Māori criteria of Kaupapa Māori. Exploring this debate is not within the scope of this paper. Still, HW has attributes that align with Durie's (2001) characteristics of a by Māori, for Māori approach and, above all, seeks to advance Māori and make positive transformational change using Māori knowledge, values, and processes. Therefore, HW is a Kaupapa Māori initiative.

4.5 Methods

Using an interpretive approach this study provides a descriptive thematic analysis of qualitative comments from post-course surveys, guided by Kaupapa Māori principles. This analysis draws on Te Ao Māori using a strengths-based approach. The study involved a retrospective analysis of post survey data over a three-year period from the HW programme based in the Waikato DHB region of Aotearoa. A paper-based post-course survey was completed by 797 māmā hapū and 355 support people. The survey explored the programme's quality, impact on levels of knowledge and understanding, and the overall experiences and views of participants. This strengths-based approach encompasses a wider set of factors that contribute to holistic individual and whānau health and wellbeing.

4.5.1 Participant selection and recruitment

Evaluation surveys were offered to all participants at the conclusion of the two-day HW. Survey results were collected with consent (participation was voluntary) and the understanding that the information would be used to explore the value of HW, with the intent to strengthen future delivery. Facilitators explained that survey results would be used to evaluate HW, and although the information provided would be de-identifiable, there would be a wider dissemination of findings.

4.5.2 Data collection

Post-course survey data held by Te Puna Oranga (Māori Health Service) at Waikato DHB was de-identified for the period of January 2016 to December 2018 with a total of 1,152 surveys, comprising 797 māmā hapū and 355 support people. During this three-year period the survey questions had been amended to adhere with pregnancy and parenting guidelines and course information, which means there are slight variations in data collected during the period. However, the fundamental questions have remained consistent over this time and the most recent post-course survey is in appendix 4.

Data consist of de-identifiable information that relates only to age and gestation (at time of participation), ethnicity and suburb of residence (important for geographical code), programme quality, impact on levels of knowledge and understanding delivered during the wānanga, and the overall experiences and views of participants.

4.5.3 Data analysis

This mixed-method interpretive study provides a descriptive thematic analysis of both quantitative data, and qualitative comments from the surveys, guided by Kaupapa Māori principles. A Māori researcher and PhD candidate undertook a dependent *t*- test statistical analysis of quantitative data and led the thematic analysis of qualitative data.

Paired or dependent *t*- tests are commonly used when determining whether a significant change between the paired samples has occurred at different stages, such as a pre- and post-test/intervention (Kim, 2015). A *t*- test was conducted for each of the seven topics covered in the HW survey, to determine whether there was a significant difference between knowledge at the beginning and knowledge at the end of the HW programme. Results from the *t*- test determined whether the following null hypothesis was accepted or rejected. Null hypothesis: There is no significant difference between knowledge before and knowledge after the HW.

The thematic analysis centred on Te Ao Māori using a strengths-based approach. Unlike a 'deficit model' approach of researching whānau and testing or checking up on parents' knowledge (Jones et al., 2010) the focus of this analysis was the whānau, seeking to portray participants' viewpoint within a culturally appropriate paradigm, moving beyond traditional research approaches that perpetuate recurring negative themes (Smith, 1999; Stoneham & Percival, 2020). Both processes involved independent analysis followed by robust, collaborative discussion, and subsequent conversations with fellow authors and supervisors (LB, PAC, LTS), as well as key stakeholders.

This study is part of a wider PhD study and received ethical approval from the Waikato DHB Research Committee on 17 July 2019, RD019056, and the University of Waikato Human Ethics Committee on 25 July 2019, HREC(Health)2019#40.

4.6 Results

Demographic data comprising participants sex, age, and deprivation index number (the number allocated to geographical location; 1 refers to levels of low deprivation and 10 refers to levels of high deprivation) were collected. In the qualitative section of the survey, the demographic data corresponded with participant quotes. Where demographics data were not available, a participant ID number was allocated. The vast majority of respondents completed all or most sections of the survey. The following sections are divided into quantitative findings, based on the HW survey questionnaire, and qualitative findings, derived from a thematic analysis of the survey responses.

4.6.1 Quantitative findings

Table 2 is a summary of the 797 māmā hapū demographic data survey responses, demonstrating a high number of Māori māmā hapū participants (63%), with that percentage being potentially higher given that 13% was "unknown". Of the known data within the socio-economic deprivation index (n = 378), 78% resided in a Level 8 to 10 NZDep area. The age range of participants was similar among the differing age groups with a spike of participants in the 22-27-years age range, and a majority of participants noting this event as their first pregnancy.

Table 2- Demographic results for māmā hapū participants- (n = 797)

Demographic results for māmā hapū participants- (n = 797)

Demographic	*Description*	*No. of māmā hapū participants*
Ethnicity	*European*	*58*
	Māori	*503*
	Pacific Peoples	*16*
	Asian	*19*
	Other Ethnicity	*101*
	Unknown	*100*
	10	*104*

Socioeconomic Deprivation Index	*9-8*	*192*
	7-6	*35*
	5-3	*35*
	2-1	*12*
	Unknown	*419*
Age (years)	*14 to 18*	*77*
	19 to 21	*137*
	22 to 27	*262*
	28 to 32	*113*
	33+	*103*
	Unknown	*105*
Gestation (weeks)	*>12 weeks*	*4*
	13 to 20 weeks	*33*
	21-29 weeks	*129*
	30 to 36 weeks	*218*
	37+ weeks	*130*
	Unknown	*283*
Primp (first time pregnant)	*No*	*131*
	Yes	*395*
	Unknown	*271*

Of the 355 support people who completed the surveys, Māori comprised 72%. The respondents consisted of various relatives, including husbands, partners, māmā and nannies, as well as observers and unspecified others, the majority of whom were 22 years or older.

The programme quality questions were presented to participants using a visual representation of emojis and corresponding headings, ranging from an "awesome" smiling face- to a "-not good" unhappy face. Of the responses noted in Table 3 the overwhelming reaction was "awesome" for all five key areas: facilitator, guest speakers, venue, kai, and resources. Of the 797 māmā hapū surveys, data from 223 respondents were unavailable for this section of the survey. Of the available data, the following percentage of respondents (n = 574) indicated "awesome" for the following programme qualities: facilitator-99%, guest speakers-89%, venue-90%, kai-95%, and resources-99%. Support people shared the same sentiment as māmā hapū participants with an overwhelming response of "awesome" for all five areas.

Table 3- Programme quality results for māmā hapū and support people

Topics	*Facilitator*	*Guest speakers*	*Venue*	*Kai*	*Resources*
Māmā Hapū (n = 797)					
Awesome	*570*	*509*	*517*	*547*	*570*
Okay	*3*	*61*	*50*	*23*	*0*
Not Sure	*0*	*1*	*2*	*0*	*0*
Other	*1*	*1*	*1*	*1*	*1*
*Data not entered**	*223*	*223*	*223*	*223*	*223*
Did not answer	*0*	*2*	*3*	*3*	*3*
Support People (n = 355)					
Awesome	*340*	*281*	*298*	*312*	*327*
Okay	*1*	*58*	*40*	*27*	*13*
Not Sure	*0*	*1*	*3*	*1*	*1*

Other	*0*	*0*	*0*	*0*	*0*
*Data not entered**	*0*	*0*	*0*	*0*	*0*
Did not answer	*14*	*15*	*14*	*15*	*14*

A dependent *t*- test was conducted on māmā hapū survey responses for each of the eight topics covered in the HW survey, to determine whether there was a significant difference in knowledge between the beginning and the end of the HW programme. Table 4 results show that the null hypothesis is rejected. Each of the topics report a *p*-value of less than 0.05, demonstrating that the HW programme provided a significant increase of knowledge for participants in each of the eight topic areas.

Table 4- Mean scores of Hapū Wānanga participant survey knowledge pre and post Hapū Wānanga

Topics	***df***	***Pre: Mean (SD)***	***Post: Mean (SD)***	***p- value***
Maternity care and your rights	*590*	*4.58(1.88)*	*8.88(0.95)*	*<0.001*
Healthy kai during pregnancy	*418*	*5.37(2.08)*	*8.65(1.29)*	*<0.001*
What to expect in labour and birth	*585*	*4.45(2.09)*	*9.05(.99)*	*<0.001*
Smoking, drugs and alcohol in pregnancy	*553*	*5.79(2.38)*	*8.97(1.21)*	*<0.001*
Feeding your baby	*561*	*4.53(2.42)*	*8.68(1.35)*	*<0.001*
Childhood immunisations	*525*	*4.72(2.35)*	*8.05(1.76)*	*<0.001*
Safe sleep practices	*577*	*4.93(2.20)*	*8.89(1.10)*	*<0.001*
Sex/sexual/contraception	*397*	*5.54(2.36)*	*8.61(1.57)*	*<0.001*

4.6.2 Qualitative findings

Several key themes were raised throughout the qualitative survey data. Figure 2 is a frequently used word map, with the Hapū Wānanga logo. Alongside the word map, this paper describes six key themes*, a) Kaupapa Māori, b) facilitator, c) thirst for, and appreciation of, new knowledge, d) life changing, e) benefits for all,* and *f) future directions* acknowledging the need for further exploration of these themes in future studies.

Kaupapa Māori: At its core, "the term Kaupapa Māori captures Māori desires to affirm Māori cultural philosophies and practices" (Pihama et al., 2002, p. 30). Weaving tikanga and Kaupapa Māori throughout the wānanga provided a uniquely Māori approach to antenatal education. The design and structure of the wānanga demonstrated that Te Ao Māori knowledge and customs were prioritised. This intentional feature created a sense of familiarity among many participants who may have found comfort within Te Ao Māori settings. Highlighting tikanga protocols, such as "w*hakatau, whanaungatanga, karakia, nga papamahi, nga kaikorero"* (Māori, 37yr old, NZDep 10) affirmed the significance and value of Māori protocols and customs. The identification of these as a valued practice may also suggest that participants had rarely experienced these conventions within other health-care settings.

Figure 3- Word cloud of Hapū Wānanga survey data

Prioritising Te Ao Māori birthing practices was also identified as a valued part of the HW. Many participants indicated their intention to incorporate practices shared in the HW as part of their labour or birthing journey. These practices include using *"greenstone to cut the pito"*, *"making own muka*" and acquiring *"muka to tie the pito"*, whenua ki te whenua burying the afterbirth in ipu made in HW, and using processes such as *"karakia"* and *"waiata"* to welcome pēpi.

The inclusion of Māori protocols and embedded Māori knowledge systems was well received by both Māori and non-Māori participants, with many revealing a sense of comfort and belonging. For example, one māmā hapū participant signalled her enjoyment of the-

> "comfortable environment, friendly support people, fun, informative, easy to listen to. Loved the singing /Māori vibe" (NZ European, 23yr old, NZDep 8).

The atmosphere had a profound effect on participants, as another māmā hapū explains,

> "I enjoyed the relaxed friendly environment. Having a Māori environment and Tikanga made it easier to relate to and understand content" (Māori, 21yr old, NZDep 9).

Several participants noted the atmosphere as being informal, non-judgemental, inclusive, positive, and comfortable. As noted in the quotes above, the deliberate design of HW with embedded Māori protocols and knowledge contributed to the atmosphere of the wānanga. These defining features of tikanga and Kaupapa Māori had a social and emotional impact on participants. Participants felt comfortable, but the atmosphere also allowed participants to *engage*, *learn*, and ultimately have *fun*.

The inclusion of guest speakers was well received by many participants. Some noted future behaviour change intentions, such as *"improving oral health care for myself*", "*change smoke alarms*", *"eat less sugar"*, and *"safe sex and contraception* [after pēpi is born]".

Facilitator: The vast majority of positive responses from participants related to the facilitator and the HW team. Although there was a specific section for participants to rate the facilitator (see Table 3), many informants specifically acknowledged the facilitator and the impact she had on them:

> Nga mihi nui mo to koutou manaaki I a matou e hapu ana kia whiriwhirihia ai matou I te huarahi tika hei whai ki te whakawhānau mai I o matou taonga. Mei kore ake ko tenei mea a "Hapu Wānanga". Kua kore hoki matou e whai matauranga. Nui te aroha (Participant ID 590).

> Ngā mihi nui ki a koe [facilitator]. Thank you for creating wānanga like these to make me as a wahine Māori more comfortable about learning about being hapū and more, and for all the information we have had the privilege of learning. Ngā Mihi. (Māori, 21yr old)

Participants identified that it was not the content the facilitator delivered but how the content was delivered that participants valued. Understanding and recognising the different experiences of māmā hapū and need for different learning styles and approaches was central to supporting the transmission of knowledge. This is reflected in the following quote:

> All the information regarding baby, labour, alternative interventions, breastfeeding and how [the facilitator] communicated it. She made something that could be heaps boring fun and super informative" (Pacific Peoples, 27yr old, NZDep 8).

Another māmā hapū echoed this sentiment:

> "I loved how [facilitators] delivered their korero, it was FULL of information and spoken in a way that we can relate to and understand. I LOVED IT!!" (Māori, 34yr old).

The pedagogies displayed in HW move beyond the traditional classroom conventions of teacher speaks and student listens, and instead incorporate the use of body, singing, and touch. These are elements that affect the wairua of HW participants.

Other words used to describe the facilitator included, *"captivating", "relevant", "real", "supportive", "approachable", "funny", "raw"*, and *"honest"*. As evidenced above, the facilitator was able to deliver appropriate content, catering to the multiple levels of health literacy and lived experiences, while also ensuring the experience was enjoyable and fun. Several participants identified the facilitator as having a genuine desire and care for those attending HW.

Thirst for, and appreciation of, new knowledge: Leading on from the Kaupapa Māori and facilitator themes, several participants expressed an appreciation for the learnings that were shared among HW attendees. As one participant articulated.

> "Learning heaps new things about midwives, birthing, labour, health all sorts, loved this two day course. Very helpful for a first time māmā" (Māori, 22yr old, NZDep 10).

The process and way in which knowledge was shared was appreciated by participants. The varying modes of information transmission- verbal cues, visual props, video clips, and kōrero- among the group were well received. This reaffirms that delivery of information using a top-down approach is not a conducive way for learnings to be shared. As one participant said.

> "I loved the wānanga style for learning and communication. I loved the cultural aspect to tikanga Māori. I loved the depth of learning to really enforce our learning -videos, demonstrations, devices" (Māori, 38yr old, NZDep 2).

These different mediums were used in a manner that respected the multitude of varying backgrounds of māmā hapū and their whānau and facilitated knowledge growth for many:

> "I enjoyed everything from beginning to end, I was engaged in every kaupapa, definitely enjoyed myself and I know I am walking away with more knowledge [than what] I had at the start of day one" (Participant ID 642).

Although the learnings and shared knowledge from HW were valued by participants, it is important to note that each māmā hapū is on their own journey and may not find all the information relevant or be in need of particular knowledge. This underlying message of sovereignty and self-determination through the mantra of "my body, my baby, my birth" reaffirmed that participants had the choice to onboard whatever knowledge and information they valued. Noting this, several voiced changes they planned to implement. These behaviour changes included- "*delay clapping", "handling a new baby gently", "breastfeeding", "no polar fleece* [when dressing pēpi]", and safe sleep practices, "*own bed … on back … no side wedges*".

Life Changing: An increase in knowledge within the HW enabled participants' self-confidence to grow. The reclamation of self and empowerment of knowledge for māmā hapū had a major impact on their birthing plans and their overall journey through pregnancy, birth, and parenting. They articulated changes such as *"[moving] from hospital to birthing unit", "no or limited medical intervention", "using breathing techniques for pain management",* incorporating the *"wave analogy to manage pain", "Dad catching baby", "not lying on back to birth*", and *"having more support people with me".*

For many wāhine birth can be both an exciting and a terrifying experience. The HW was a catalyst to support māmā hapū to (re)gain confidence to birth their pēpi. Remarks such as *"have trust in myself*" and *"listen to my body"* are examples of women's increase in confidence. The shifting of mindsets and support of wāhine moving from a state of fear- to one of empowerment- are evidenced by the following quote:

> I have gained extra confidence by attending, after finding out about my recent pregnancy I was very anxious and fearful of birth and did not have confidence in my body. I've now learned that my last birth being posterior and previous to that being induced without medical pain relief, that my body took a lot extra pain and this time around I will not be inducing and keeping an eye on position on baby that I can turn. (Participant ID 627)

The confidence instilled in them by HW enabled participants to more comfortably engage with people in positions of power, such as midwives or other health professionals. This was evidenced by comments from participants exclaiming their intentions of "speaking up" and "asserting my rights". The HW was also a source of inspiration, with one participant expressing a desire to be involved and actively contribute to future HW programmes:

> "I am looking for what I am passionate about, and this class made me really want to get involved I think it's amazing. If you need a hand with anything, get in touch, even cleaning" (Māori, 17yr old).

Benefits for all: The Kaupapa Māori design means that the HW is a by Māori, for Māori programme. However, HW facilitators have not limited the programme to Māori: participation from all ethnicities is encouraged. As highlighted in Table 1, HW survey data reflects that 37% of attendees identified as non-Māori or unknown. Several participants, including those selecting a non-Māori ethnicity highlighted the positive impact HW has had on them and that it will have for future potential participants. Following are quotes evidencing the positive endorsement from rangatahi, as well as a māmā hapū who already had tamariki.

This comment articulates the appreciation this first-time māmā had for HW:

> "Thank you very much for supplying us with the information we needed and I hope more teen parents like myself will come and check out Hapū Wānanga and take notes about everything" (Māori 15 yrs old).

Though not a current hapū māmā, a 47-year-old New Zealand European also identified value in the programme:

> This was just fantastic I wish they had hapū wānanga when I was having babies. The level of information was outstanding we can make robust informed choices moving forward with the new baby and pregnancy. It's a bloody good programme, love it, thank you. (NZ European, 47yr old).

The former māmā hapū also recognised that the HW programme is of value to other pregnant rangatahi. This is echoed by another rangatahi participant who intended to recommend HW to their *"hapū friends and whānau"* (Māori, 17yr old).

The inclusion of whānau in the HW is a testament to the holistic approach of the programme. This was evidenced by the following comments from support people who gained confidence and clarity on how they can support māmā hapū:

> It was a really big eye opener as a support person [sic]. I am confident to support my sister's pregnancy. The environment was comfortable and enjoyable. [The facilitators] are awesome. Enthusiasm is great and I will definitely return when I have a pēpi coming along (Māori 18yrs old, sister).

The next quote also supports the idea that a holistic approach to antenatal education must recognise the different expectations of end- users and that a one-size-fits-all universal approach does not consider wider perspectives:

> I never expected that I will learn a lot of things. One of the best lectures I've had. I initially thought that I'd rather go fishing, but I'm really thankful that my wife and our midwife pushed us to attend. (41+ yr old, husband)

Some participants with a background in maternity care, namely, midwives and a health lecturer, found benefit in the HW programme suggested the programme be part of future midwifery training. The comments from participants highlighted above suggest that the HW programme is filling a gap in antenatal education, with benefits being felt by māmā hapū, support people, and health professionals.

Future Directions: Some participants expressed a desire to re-engage with the HW programme, as the following quote attests:

> "Tumeke ladies. Thank you so much for everything, ya'll do an amazing job. Love, love, love. Coming back when I have more babies. Hahaha" (Participant ID 625).

This sentiment was echoed by other participants who suggested an expansion of the programme for māmā hapū to attend a similar wānanga after the birth of their pēpi. Participants also identified that the growth of HW is of critical importance. For instance, a participant residing in a rural area exclaimed that more support for HW in rural communities is needed. Some respondents expressed the need for HW to be a nationwide programme but recognised the need for appropriate and adequate resourcing. These suggestions affirm the endorsement of HW for future participants, reinforcing the idea that the HW is a valuable programme.

4.7 Discussion

This study used the experiences and voices of HW participants to portray the participants' viewpoints on aspects of the HW class. Factors that were important to participants included the embedded Kaupapa Māori design and delivery; responsive and empathetic facilitators; a thirst for, and appreciation of, new knowledge; life-changing information; and benefits for all people, including but not limited to Māori and non-Māori participants, partners, grandparents, and other health professionals.

Statistical data from the *t.* test revealed a significant increase in participant knowledge after the HW programme in all topic areas. A limitation of this study is the missing or incomplete data sets, which resulted in an average of 32% participant survey responses being excluded in the *t.* test. An assumption can be made that those participants who did not complete the survey did not have a knowledge shift, did not understand the survey question, or preferred not to respond. The incompleteness of the data demonstrates a need for further consideration of data collection methods and processes to determine the extent and impact of the HW programme.

Still, the high number of post-evaluation surveys completed demonstrates that an overwhelming number of participants found HW to be a highly valuable programme that exceeded their expectations. The embodiment and use of traditional Māori protocols such as whakawhanaungatanga and waiata established a safe and comfortable environment for both participants who were familiar with a Te Ao Māori setting and those who were not.

Several participant responses align with mana motuhake (mana through self-determination) (Carlson, 2019; Moore et al., 2014). For health services, this translates into "enabling the right for Māori to be Māori; to exercise authority over their lives, and to live on Māori terms and according to Māori philosophies, values and practices including tikanga Māori" (Ministry of Health, 2020, p. 1) . The themes used throughout this paper embody the obligations set out by Te Tiriti o Waitangi-Aotearoa's founding document. HW is an example of a health service that supports participants with new, valuable, and relevant learnings. As one key informant explains:

> being empowered as a wahine hapu who is Māori. I know my rights. I know now that it's my body, my baby, and my birth. [Hapū Wānanga] was delivered by experts who live and breathe what they

> teach, who are actively revitalizing traditional practices in the hope that these practices are normalised and that they are promoting local specialists i.e. acupuncture, wahakura, clay, photography etc. Also, the reality of childbirth, the piki and heke. (Māori, 30yr old, NZDep 10)

HW has challenged the preconceived notion that Māori do not engage in CBE classes, demonstrating that a Kaupapa Māori antenatal wānanga attracts Māori māmā hapū, wider whānau, and non-Māori engagement and endorsement. This paper amplifies the experiences and voices of HW participants to affirm positive aspects of the class. The broad themes of participant responses were highlighted however further exploration in this area is needed. Findings from this study counter prevailing assumptions that Māori do not engage with health services and suggest that an Indigenous, strengths-based approach to CBE service design and delivery, has positive and transformation results for whānau.

4.8 Recommendations

To enhance the likelihood of Māori participation, funding agencies must support CBE programmes that involve and prioritise Māori expectations, content, and delivery. Participants identified the following characteristics as valuable within the HW: ensuring necessary tikanga Māori customs and protocols are followed, such as pōwhiri and whakatau, whakawhanaungatanga, karakia, and waiata; an atmosphere where participants feel comfortable and safe; a facilitator with an authentic and genuine appreciation of all participants; and different learning mediums and knowledge sharing sources, such as leveraging of experiences of participants as well as the knowledge of the facilitator. Underpinned by Kaupapa Māori principles, these characteristics are what make HW a unique and valued programme for both Māori and non-Māori participants. Therefore, HW, and other Kaupapa Māori CBE programmes, should be prioritised in future CBE policy and investment decisions.

4.9 Acknowledgments[9]

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[9] Appendix 5: Co-authorship form article 2 chapter 4

4.10 Glossary of Māori terms

Aotearoa	**literally "Long White Cloud"; in common usage as the Māori name for New Zealand**
hapū	pregnant sub-tribe
Hapū Wānanga	a by Māori, for Māori childbirth education class
heke down	heke down
ipu	clay pot to put the placenta in
iwi	tribe
kai	food
kaikōrero	speakers
karakia	prayer
kaupapa	topic
Kaupapa Māori	a philosophy most often expressed in the delivery of culturally appropriate and relevant services to Māori in the education, health, and welfare sectors. These services are colloquially referred to as "by Māori, for Māori"
kōrero	discussion
māmā hapū	expectant mothers
mana	prestige, status, authority, influence, integrity; honour, respect
mana motuhake	mana through self-determination and control over one's own destiny
Māori	Indigenous Peoples of Aotearoa
marae	Māori meeting house
mātauranga-a-whānau	Māori whānau knowledge
mātauranga Māori	Māori knowledge
muka	flax fibre
Pākehā	New Zealanders of European descent
papamahi	fathers role/work
pēpi	baby
pike	up
pito	umbilical cord
pōwhiri	welcome ceremony
rangatahi	teenagers
tamariki	children
tapu	sacred

Te Ao Māori	Māori world view
te reo Māori	Māori language
tikanga	values, beliefs, custom, rule, principles
tohunga	Māori healer
tumeke	awesome
wahakura	woven bassinet for infants
wahine	woman
wāhine	women
waiata	song
wairua	spirit
wānanga	a traditional method of Māori knowledge transmission
whakamā	shy
whakatau	informal Māori welcome
whakawhanaungatanga	a process of introducing and connecting with others, often based on genealogical connections
whānau	family
whare	house
whenua	placenta; land
whenua ki te whenua	returning the placenta to the earth mother Papatūānuku

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Chapter 5: Reflections on the co-design process of a holistic assessment tool for a Kaupapa Māori antenatal wānanga (workshop)

5.1 Preface

The previous chapter provided an example of a Māori-led childbirth education class that received positive endorsement from both Māori and non-Māori participants. The systematic review undertaken in chapter 3 highlighted a lack of Indigenous voice in antenatal education class academic scholarship. However, the review found that interventions targeting a specific ethnic group, employing elements of culture and language in a manner that resonated with the intended participants, yielded positive responses. This was evidenced in the previous chapter with Hapū Wānanga.

This next chapter centres on another Kaupapa Māori antenatal wānanga Whirihia Te Korowai Aroha (Whirihia). The focus of this paper is on the co-design of a holistic assessment tool to support participants to engage with health and social service providers. As a Māori researcher I was motivated to use my position as a researcher to support the facilitators of the Whirihia wānanga to strengthen their programme. In the following autoethnographic paper I share my account of co-designing a holistic assessment tool to support fellow Indigenous emerging researchers who wish to work with health providers.

5.2 Reflections on the co-design process of a holistic assessment tool for a Kaupapa Māori antenatal wānanga (workshop)

Co-designed health initiatives are gaining popularity in Aotearoa (New Zealand). However, emerging research identifies potential pitfalls for Indigenous populations, particularly Māori (Indigenous Peoples of Aotearoa), when Kaupapa Māori principles are ignored. Using the Indigenous He Pikinga Waiora Implementation (HPW) framework as a guide, this paper provides an autoethnographic reflective account of the co-design process that led to the development and implementation of the Whirihia holistic assessment tool for the Kaupapa Māori antenatal wānanga (workshop) Whirihia Te Korowai Aroha. The co-design process resulted in a culturally appropriate and responsive holistic assessment tool that provided a quality health needs assessment pathway for māmā hapū (pregnant women) and their whānau (family). This reflective account provides examples of key considerations that align to the HPW framework in the hope that it will afford some guidance for fellow emerging researchers who wish to undertake ethical co-designed health research with Māori (and non-Māori) communities and organisations.

Keywords: co-design; maternity; pregnant; holistic; antenatal; Māori; autoethnography

5.3 Introduction

Co-design is a relatively new term used to describe a “philosophical approach and evolving set of methodologies for involving people in the design of the services, strategies, environments, policies, processes- that impact them” (Mark and Hagen, 2020, p. 4). Potential advantages of co-designed interventions include greater alignment with end-user needs (Kildea et al. 2019; Sun et al. 2021), increased end-user engagement and ownership (Rarere et al. 2019; Oetzel et al. 2020), and cost-effectiveness (Marent et al. 2018). Though academic scholarship both nationally and internationally is growing (Dietrich et al. 2017; The Southern Initiative 2018; Harding et al. 2021), the definition and implementation of co-design has been inconsistent and variable in quality (Mark and Hagen 2020). As a result, no universal definition of what constitutes co-design has been agreed upon (Mark and Hagen 2020; Barrett and Masters-Awatere 2021; Harding et al. 2021; King P et al. 2022). Still, scholars have identified fundamental elements contributing to co-design practices.

Participation is a key element in the co-design process. As King P (2021) argues, the degree to which participation features in co-design can vary from participation within a particular phase of a design process, to participation across the whole design process. Slattery et al’s (2020) review revealed a varying degree of participation across a range of co-designed studies and concluded that to achieve meaningful involvement of research users, participation must be explicitly described and defined.

Lynch (2002) claims that partnership, another fundamental element of co-design, is seen as a higher end of a continuum of participation. Similar to the ways participation has been framed, Matheson et al. (2005) argues that, across scholarship and disciplines, the definition, and use of, partnership has been inconsistent. Mark and Hagen (2020) further explain that the term ‘partnership’ has saturated many studies, with the word applied either too liberally or yielding no meaning for community or end-users. Rarere et al (2019) suggest that partnerships should actively adopt critical reflection processes to help “build strong trust and synergy, power sharing and effective sustainable implementation practices” (p. 478).

Co-designed health interventions have the potential for transformational and positive change for end-users (Slattery et al. 2020). However, there are consequences if the necessary commitment is not followed through with and delivered on (Boyd et al., 2012; Mark & Hagen, 2020). The absence of a universal definition of co-design can have harmful implications for Indigenous Peoples (King P et al. 2022) and minority ethnic groups (Chauhan et al. 2021). King P (2021) discusses “…the emergence of co-design as a market/commodity, and the parallel presence of harmful colonial, racist, paternalistic, deficit, othering, voyeuristic and extractive discourses within the field of co-design” (p. iii-iv). King P et al. (2022) further suggests that a lack of literature means it is difficult to assess whether co-design is effective for priority groups, and whether co-design reduces health inequities or not. Slattery et al. (2020) concurs and finds that the effectiveness of co-design has rarely been evaluated.

Despite the aforementioned issues, co-design *can* be a valuable health research tool in Aotearoa (Mark and Hagen 2020). Given the significantly low number of Māori academics and Māori health workforce in high leadership positions compared to non-Māori (Sewell 2017; McAllister et al. 2022), it is inevitable that non-Māori will undertake research on or with Māori. Co-design is a research process that has the potential to align with ethical Māori research protocols such as the Te Ara Tika Guidelines for Māori research ethics (Hudson et al. 2010). However, given past indiscretions, Māori concerns about the potential for co-design to be used and measured as successful without authentic engagement and equal power sharing, and the potential for bastardisation of Kaupapa Māori (Māori ideology incorporating the knowledge, skills, attitudes and values of Māori society) principles, are warranted. The He Pikinga Waiora (HPW) Implementation framework is a guide to carrying out ethical co-design with Indigenous, particularly Māori, communities to ensure health initiatives are culturally appropriate and responsive for end-users (Barrett and Masters-Awatere 2021; Masters-Awatere et al. 2021).

In response to a lack of Indigenous theoretical health implementation frameworks the HPW framework was developed to support the successful co-design, development, and implementation of health interventions (Harding and Oetzel 2019). At its core, the HPW has Indigenous self-determination, ensuring that implementation of interventions are grounded in practices of Indigenous decision making. The HPW which consists of four elements, Cultural Centeredness, Community Engagement, Systems Thinking, and Integrated Knowledge Translation, and a further eight principles (Oetzel et al 2018; See Appendix One). These eight principles are, community voice, reflexivity, structural transformation and resources, community engagement, integrated knowledge translation, systems perspectives, system relationships, and system levels. These eight principles fit within a matrix consisting of a description of each principle and a scoring criterion; high, medium, low, and negative, with a rationale for each score. The purpose of the matrix is for project stakeholders to assess the extent to which the project was authentically co-designed. This practice can be used to ensure continuous improvement, highlighting areas that require greater focus.

Using the HPW framework as a guide, the overall aim of this paper is to explore the intricacies of co-designing a holistic assessment tool for a Kaupapa Māori antenatal wānanga (workshop). In my capacity as both a researcher and collaborator, I use autoethnography to achieve the following objectives. The first objective of this paper is to share my reflections and experiences of these dual roles. The second objective is to make explicit the research practices that were undertaken during the co-design process, practices that we as Māori often take for granted (Ormond et al. 2006). Finally, the purpose of this paper is to provide practical examples to support fellow emerging Māori and Indigenous researchers working alongside health professionals and communities.

To locate the holistic assessment tool in context, I begin by canvassing the current state of Māori maternal health. I then provide an overview of traditional Māori birthing practices and several examples of contemporary Māori led health initiatives, before focusing explicitly on the co-design process of the holistic assessment tool and my reflections on this.

5.3.1 Maternity

In Aotearoa (New Zealand), Te Whatu Ora, previously known as the Ministry of Health, provides free maternity services to citizens and eligible residents (Ministry of Health 2021). However, Māori māmā (mothers) and pēpi (infant) disproportionately experience negative health outcomes compared to their Pākehā (non-Māori most often New Zealand European) counterparts (Moewaka Barnes et al. 2013). Māori infants have greater exposure to cigarette smoke and alcohol while in utero, higher rates of maternal and Sudden Unexpected Death in Infancy (SUDI), lower infant birth weight, higher rates of hospital admission for respiratory illnesses, and lower childhood immunisation rates (Blackwell et al. 2004; Mitchell 2009; Walker K 2019; Godoy and Maher 2022). Over the decades, a range of factors have contributed to these persistent Māori health outcomes.

First, the lack of acknowledgement of the colonial history of Aotearoa (Rolleston et al. 2020). Colonisation has, and continues to, negatively impact the health of Indigenous Peoples in settler states (Morrissey 2003; Bramley et al. 2005; Paradies 2016; Reid et al. 2017). In relation to childbirth knowledge and practices, colonisation intentionally damaged almost all aspects of Māori maternities (Simmonds and Gabel 2016).

Second, there have been numerous and continuous systematic failings of the New Zealand health system (Rolleston et al. 2020) that create barriers to access health services and the provision of quality health care (Jones 2001; Scott 2014). These systematic failings have been documented in studies exploring Māori experiences interacting with maternity services.

Stevenson et al. (2016) for instance, found that Māori experience racism in various stages of their maternity journey. Maternity services use terms such as ‘vulnerable’ and ‘high risk’ (Pihama 2011) to describe Māori, and labels such as ‘hard to reach’, ‘do not engage’, or ‘whakama (shy)’ as reasons for non-engagement with services (Wilson and Huntington 2006; Pihama 2011). These labels ultimately place blame for non-engagement on the individual, and by extension, justify low Māori attendance rates. Pihama (2011) found that Māori teenagers experience negative stigma when engaging with health services. As a result, Māori mothers are opting not to engage with services for ‘fear of being judged’ or ‘told what to do’ (Ellis R 1998; Haereroa 2015). Though studies have found that Māori are more likely to present later in their pregnancy or not at all, to antenatal services, than their Pākehā counterparts (Hodgetts et al. 2004; Pihama 2011; Ratima and Crengle 2013), Makowharemahihi et al. (2014) found that young Māori *do* engage early with health services for maternity care but systemic failings often resulted in a delay in accessing that care.

Third, the shortage of holistic health initiatives that take into account of collective and whānau-based outcomes was identified as a contributing factor for Māori ill health (Rolleston et al. 2020). Within Aotearoa, and other countries with a similar colonial history, health programmes and services have largely focused on Western, rather than Indigenous understandings of health (King M et al. 2009). Holistic and whānau-centred models of health resonate with Indigenous Peoples (King A and Turia 2002), yet the models they encounter are more often than not premised on individualised and biomedicalised views of health that bear little relation to Māori approaches.

As a consequence of these three causes of Māori ill health, analyses of literature have tended to focus on the negative aspects of Māori maternal health. However, emerging studies have begun to highlight the strengths of a Kaupapa Māori led approach to maternal health provision.

5.3.2 Revitalisation of traditional Māori birthing practices and addressing health inequities

Several traditional Māori birthing practices have been revitalised in the last two decades to address negative maternal and infant health outcomes for Māori (Tikao 2013; Abel et al. 2015; Kairua Innovation et al. 2021). The wahakura, a woven flax basket that can be used in the parental bed (Abel et al. 2015), is one example of an intervention aimed at reducing SUDI in Māori communities. The process of weaving a wahakura creates an environment for maternal information to be shared with expectant mothers, such as quit smoking and SUDI risk factors, whilst creating a practical resource that provides pēpi with their own safe sleep space, protecting them from accidental suffocation. Mitchell et al. (2016) identified the value of a holistic approach to SUDI prevention, with the incorporation of education strategies and a targeted supply of wahakura, which then contributed to a fall in post perinatal mortality in Aotearoa.

Māori maternities was an established system prior to colonisation and, although legislation and Western systems have intentionally sought to disrupt the constituents of Māori motherhood, Māori maternities remains a "space of resistance and tino rangatiratanga" (Gabel 2013, p. iv). Māori maternities grounded in Māori traditions, philosophies and ideologies is a form of reclamation (Simmonds and Gabel 2016; Simmonds 2019). Table one displays examples of traditional birthing practices described by Tikao (2013). Many of these practices are being revitalised in Kaupapa Māori antenatal education wānanga, such as Hapū Wānanga ki Tainui (Te Whatu Ora Waikato 2023) and Hapū Wānanga Taranaki (Te Whatu Ora Taranaki 2023).

Tikao (2013) argues that Māori led initiatives that acknowledge the impact of colonisation, address ethnic inequities of health, and are grounded in te ao Māori (Māori world view) and holistic models of care, can improve Māori maternal and infant health outcomes. Many of these Māori led initiatives are challenging to locate in academic scholarship. This is not to say that these programmes do not exist. Rather, as Graham and Masters-Awatere (2020) suggest, "…much of the work conducted by Māori practitioners is not published in academic sources" (p. 199).

In what follows I afford some insight into the Kaupapa Māori antenatal wānanga Whirihia Te Korowai Aroha. This Māori led and driven service is a vehicle to revitalise and privilege traditional Māori birthing practices and knowledge as a means of addressing health inequities.

5.3.3 Whirihia Te Korowai Aroha (Whirihia) antenatal education wānanga

Whirihia Te Korowai Aroha (Whirihia) is a Kaupapa Māori antenatal wānanga designed and led by a Māori childbirth educator and Māori health professionals. Whirihia, run out of a national not-for-profit organisation Whānau Āwhina Plunket, is a free two-day wānanga designed to empower, enrich and support māmā hapū and whānau to learn about the stages of hapūtanga (pregnancy), whakawhānau (birth), and parenting support (Whānau Āwhina Plunket 2022).

Along with Western medical knowledge and information, Whirihia embeds many of the traditional birthing practices noted in table one. Participants can create resources based on these practices, such as making ipu (clay pot) for the whenua (afterbirth) to be buried in a place of significance to whānau once pēpi is born. This practice of whenua (afterbirth) ki te whenua (land) is a sacred tradition for many hapū (sub-tribes) across Aotearoa as this process connects pēpi to where they are from, a connection that can never be broken.

Other distinctive characteristics of the wānanga include, embedded Māori tikanga (values and beliefs) practices, including the use of te reo Māori (Māori language), powhiri (welcome), and waiata (song). These practices build a sense of safety (mentally, physically, and spiritually) for both Māori and non-Māori participants, with facilitators creating an environment where participants feel comfortable to interact with one another.

Another characteristic of the Whirihia wānanga is the incorporation of guest speakers from external health and social agencies to connect services with whānau. This is an important aspect of the Whirihia wānanga that aims to address barriers to accessing health services.

5.4 Research design

5.4.1 Initial stages of co-design project

Across Aotearoa there are existing services and supports for māmā hapū but not all are responsive to Māori (Stevenson et al. 2016). The Whirihia team recognised the potential benefits of bringing services to one place to promote to whānau yet were also acutely aware of access barriers and the lack of quality care afforded to whānau. The Whirihia team and I decided to embark upon a research project to co-design a holistic assessment tool (later named the Whirihia tool). Initial conversations around a holistic tool were based on the Kaupapa Māori designed Harti Hauora Tamariki tool (Masters-Awatere and Graham 2019a; Atatoa Carr et al. 2020). The Harti Hauora Tamariki tool is a "whānau-ora based assessment instrument designed to reduce health inequities" (Masters-Awatere and Graham 2019b, p. 471). One of the aims of the Harti Hauora Tamariki tool is to facilitate connections across the health system delivered in a culturally responsive manner. Similar to the Harti Hauora Tamariki tool, the purpose of co-designing the Whirihia tool was to address unmet health need and provide a quality referral pathway with an in-built feedback loop to ensure services were responsive to whānau and Whirihia feedback. Ensuring quality and accurate data collection processes was a secondary aim of the Whirihia tool.

5.4.2 Research context

Table two documents the roles and responsibilities of myself as the researcher and collaborator, and the Whirihia team. The Whirihia team led the design of the Whirihia tool, specifically identifying the service providers (who they are, what service they provide, and details for referral onto the service). One of my roles was to construct and test the Whirihia tool within the Whirihia wānanga (testing of the Whirihia tool is out of scope of this paper). Understanding the valuable contribution this unique co-design process can make to health scholarship, it was agreed that I would produce a dedicated paper documenting the co-design process of developing the Whirihia tool. Noting that the Whirihia team would not have the capacity to devote time and effort toward the co-design paper, the paper would be a reflection of my experiences.

In documenting this process, I hope to support other emerging researchers, health professionals and community who are interested in undertaking similar work. In so saying, it is important to foreground that what follows is my interpretation and reflection on the processes of co-designing a holistic assessment tool for the Whirihia wānanga. As a guide to co-designing health interventions, I applied the HPW framework to align examples noted throughout the processes with my reflections as both a researcher and a collaborative partner of the Whirihia tool's design.

5.5 Methods

5.5.1 My position as a Māori researcher

One of the first questions I had for my supervisors when I thought about writing a reflective autoethnographic piece was, would it be a valid piece of scholarly literature? The response was, “absolutely”. With further investigation into autoethnography, reflexive practice, and Māori researcher ethics and identity, I discovered this is a shared question other emerging Māori researchers’ have. For instance, Webber (2009) faced similar questions contending with the complexities of a ‘multiplicity of identities’ and what these mean for her as a Māori researcher immersed in an academic world. I unpack this below.

Māori researchers face multiple complexities that non-Māori scholars do not necessarily need to deal with. As a Māori researcher, I am bound by academic obligations as well as cultural responsibilities, specifically to those I am researching about (Smith 1999; Smith et al. 2016). Whilst also needing to address the multi-layered, multi-dimensional context Māori exist in within contemporary society (Smith 2006). Autoethnography is a method of addressing some of these complexities.

Ellis C and Bochner (2000) define autoethnography as "...an autobiographical genre of writing that displays multiple layers of consciousness, connecting the personal to the cultural" (p. 739). Wall (2006) goes further to explain that “the intent of autoethnography is to acknowledge the inextricable link between the personal and the cultural and to make room for non-traditional forms of inquiry and expression” (p. 146).

As a Māori researcher autoethnography is a means to highlight skills and principles learned through experience. Smith (2006) and Ormond et al. (2006) identified the value and need for Māori researchers to make explicit the understandings of why processes are undertaken, as often these methods are taken for granted and not fully appreciated by emerging students. Yet, autoethnography is not simply writing about oneself. Rather, it involves being critical about personal experiences in the development of the research being undertaken, or about one's experiences of the topic being investigated (McIlveen 2008). As Ellis C (2007) further explains, ‘doing autoethnography involves a back-and-forth movement between experiencing and examining a vulnerable self and observing and revealing the broader context of that experience (p. 14).

Reflexivity is a core feature of autoethnographers' work. Berger (2015) defines reflexivity as the ability to “recognize and take responsibility for one’s own situatedness within the research and the effect that it may have on the setting and people being studied, questions being asked, data being collected and its interpretation” (p. 220). Characteristics of reflectivity weave into autoethnography, and vice versa, and this interweaving is one of the core principles of the HPW framework and is vital for co-design. Schon’s theory of reflective practice has assisted a variety of experts within their fields of practice. His work was most noted for the formulation of “…a new epistemology of practice founded on knowing-in-action and reflection-in-action” (Ramaga 2017, p.1159). Lichtenstein (2000) highlights a key feature of Schon’s model as being that “inquiry in the moment is inherently uncertain, whereas at the same time this very uncertainty is what leads to new knowledge” (p. 48).

Aligning to the overall aim of this paper, I use autoethnography to provide a critical and purposeful insight of my experiences related to the co-design process. Paired with the HPW framework, autoethnography will enable me to provide practical examples that afford fellow emerging researchers an insight into both the achievements as well as obstacles I had to overcome. Some examples may seem straight forward, especially to fellow Māori researchers who live and breathe many of the values that underpin te ao Māori such as whakawhanaungatanga (relationship/connections). However, these small insights provide the fundamentals needed to build reciprocal relationships between researchers and communities, and ultimately to serve Māori communities in ways that do not further burden them. As Wall (2006) states, "knowledge does not have to result from research to be worthwhile, and personal stories should have their place alongside research in contribution to what we know about the world in which we live" (p. 158). Like Wall (2006) and Webber (2009), I am drawn to autoethnography as a way to describe the co-design process of the Whirihia tool.

5.5.2 Data Collection

Using data collected from comprehensive field notes, observations, and formal and informal hui (meeting) records, I provide an insight into the intricacies of a co-design process, weaving multiple layers of personal and cultural aspects into the story I tell of the Whirihia tool's development and implementation.

5.5.3 Ethics statement

Ethics was approved by the University of Waikato Human Ethics Committee on 13th November 2019 HREC(Health)2019#40.

5.6 Findings

5.6.2 Co-designed Whirihia Holistic Assessment tool using the He Pikinga Waiora Implementation framework

In autoethnographic style, I separate each of the HPW principles, then provide a definition for each with an accompanying narrative analysis. I take on an active voice to provide insight into some of the key processes that resulted in the co-designed Whirihia holistic assessment tool. Appendix one is the HPW framework that maybe useful as a reference in this section.

5.6.3 Principle One: Community Voice

Community voice considers the participation of community members as end-users, or the intended primary beneficiaries of a programme/service, in contributing to the definition of the problem, and developing the solution (Oetzel, et al 2018).

Problem definition

The Whirihia team identified that the current process of assessing health need and providing a referral pathway needed strengthening. The Whirihia team invite internal and external guest speakers to the Whirihia wānanga to promote their services to wānanga participants. This process of whakawhanaungatanga provides attendees with an opportunity to know what the service is, what it does, and, most importantly, who they will engage with if participants choose to be referred into the service. The in-person greetings coupled with the recommendation from Whirihia facilitators give attendees confidence in the potential future engagement with said service. The reassurance from the Whirihia facilitators that attendees can directly contact the Whirihia team should they have either a positive or negative experience with the service takes referral to the service to another level. The problem with this process is that it is informal with no quality data management process attached to it. The numerous services also meant participants were required to complete separate referral forms for each service, with many referrals requesting duplicate information. This was a nuisance for participants and time consuming, taking up valuable wānanga time. The Whirihia team wanted a faster, standardised process of identifying health need and referring on to appropriate services.

Development of solution

As a researcher, I worked with the Whirihia team to develop a visually appealing, easy to complete Whirihia tool that identified health need and provided a mechanism for whānau to choose if, and what service/s that would like a referral in to. The tool would save valuable time and mean participants were not having to complete numerous, repetitive forms. The tool also collected data on the number of referrals received and to what services. This information could subsequently be used to inform funders of priority services for expectant mothers and their whānau.

Western research is focused predominately on a researcher identifying a problem and posing a potential solution. Within this research project, the Whirihia team already had the mechanisms in place to solve an identified problem with their current practice. My role was to support the co-design of a solution to a problem that was important to the Whirihia team, and one that could directly impact wānanga participants.

5.6.4 Principle Two: Reflexivity

Reflexivity, in this context, referred to how the implementation team can be reflexive, identifying needed adjustments to the intervention (Oetzel et al. 2018). In what follows I demonstrate how the power and privilege of the researcher (myself) was recognised, and to what extent this influenced the intervention team's decisions and the nature of the intervention.

Academic research vs community engaged praxis

I identified early in my academic journey the significance of the researcher as a reflexive practitioner. Prior to officially undertaking this research I had several conversations with the Whirihia team about what kind of research would benefit them. Together we eventually landed on the 'co-design of a holistic assessment tool'. I constructed a research proposal as was required when undertaking a Doctor of Philosophy, discussed it with the Whirihia team, got final sign off from their wider organisation managers, and the research got underway.

To begin shaping of the 'co-design tool' the Whirihia team and I initially planned on holding a stakeholder co-design hui involving the Whirihia team and external health and social service providers. From my academic perspective this was a logical step. As the researcher I would meet with all the services, discuss what the service provides, and create a referral pathway. I suggested this process to the Whirihia team, and they were supportive. Though the Whirihia team had confidence in me as the research expert, it took a process of reflection on my part to recognise that this hui would not provide any added value to the Whirhia team. They had already established good relationships with providers and had these processes in place, albeit unstructured and inconsistent. I had to take a moment to stop as the research had gained so much momentum since the initial research design conversations, I had not realised that the fundamentals of this process were already in place, and my role was to strengthen these relationships, rather than create unnecessary workload for the team.

It was an ‘oh my goodness’ moment because it seems so obvious in retrospect. I had to get out of my ‘project management mind’ and ask myself the simple question, why are we having this hui? This hui would suit me as the researcher as I have the capacity and availability to meet with people but these health workers do not always have that luxury. I questioned whether this hui was necessary and after discussions with the Whirihia team about whether a ‘co-design’ wānanga is required when processes are already established, it was eventually concluded that this step was unnecessary. The foundational relationships the Whirihia team had built provided the basis of what was needed to begin construction of the Whirihia tool.

Another example of reflexivity involved the participant criteria. For research purposes I only required 12 participants to consent to the study. At the first day of the Whirihia wānanga I introduced myself and explained the research I was conducting with the Whirihia team. Further, I explained that only 12 participants were needed for the study and I would complete consent tomorrow for those wishing to participate. I reflected that night around the issue of limiting the number of participants, ‘it did not feel right’. I spoke to the Whirihia team the next morning and asked how they would feel if I opened it up to all participants of the Whirihia wānanga that wanted to participate. The Whirihia team felt relieved when I told them as they too did not feel comfortable about allowing only some and not everyone the ability to participate. I intentionally changed the limit of participants and opened the floor to any māmā hapū who wanted to be part of the research.

These scenarios are examples of me, as the researcher, reflecting on my position of power and making necessary changes to ensure a genuine co-design research process. I had to acknowledge that although the Whirihia team and I shared leadership in this project, I still held a position of power as the researcher. This meant throughout the entirely of the project, I had to be actively aware of this position and how it could influence the co-design process.

5.6.5 Principle Three: Structural Transformation and Resources

Structural transformation and resources explores how the Whirihia tool results in significant structural transformation and resources which are sustainable over time (Oetzel et al. 2018).

A secondary aim of the Whirihia tool was to create a quality data management system, making it easier for the Whirihia team to one, refer participants into services, two, provide follow up support for participants with services if needed, and three, accurately record and display data that highlights the work the Whirihia team do that extends beyond current contractual obligations. Not only did the Whirihia tool create a quality management system that met the three requirements outlined above, the system allowed more time for the Whirihia team to focus on the wānanga as participants were not having to complete numerous referral forms. This resulted in decreased administerial workload for the Whirihia team. This outcome demonstrated that the Whirihia tool improved capacity of the Whirihia team. As a result it is hoped that the organisation’s IT department will develop a digital Whirihia tool, resulting in long term sustainability.

5.6.6 Principle Four: Community Engagement

Community engagement considers the level of involvement, impact, and trust between community members (Whirihia team) and the researcher. Central to strong community engagement is bi-directional leadership, defined by Vaughn et al. (2017) as shared leadership, decision making, and communication.

Throughout the development and implementation of the Whirihia tool there was evidence of shared leadership, decision making, and communication. Setting clear expectations at the beginning of the research project (during the research design phase) set the tone for the entire co-design process. The Whirihia team was able to explain their priorities for the Whirihia tool and their level of capacity and involvement in the research. I was then able to construct a draft tool for the Whirihia team. Regular engagement, both formal and informal hui, allowed for review and amendment of the tool. This open communication resulted in the successful implementation of a responsive Whirihia tool for the Whirihia wānanga.

5.6.7 Principle Five: Integrated Knowledge Translation

Integrated knowledge translation explored activities within the context of the community in which knowledge is applied. There is a process of bi-directional (shared) learning established so that information is tailored to knowledge user needs (Oetzel et al. 2018). Integrated knowledge translation centred on engagement between the Whirihia team and myself and the role we each played in the design and implementation of the Whirihia tool.

The Whirihia tool is a product of the Whirihia team whom, over many years, have built relationships with stakeholders, and onboarded feedback from past antenatal wānanga attendees. Although end-users were not directly involved in the co-design of the Whirhia tool, the tool is a product of previous participant feedback, informal conversations between māmā, whānau, and the Whirihia team, and the sharing of stories on a childbirth education Facebook page. An example of how the Whirihia team used anecdotal feedback to identify health need was the overwhelming request to access mirimiri services. As a result of requests from expectant māmā and their whānau, the Whirihia team identified services that provide mirimiri and incorporated them into the wānanga. As the Whirihia team travel across the Waikato District Health Board region, the Whirihia team made connections with several mirimiri services across the region.

As a researcher it was important for me to privilege the expertise of the Whirihia team who have a proven track record of engaging with māmā hapū and their whānau. The Whirihia tool is a result of bi-directional learning, where I was able to learn from the Whirihia team the priorities of the end user, and I was able to share with the Whirihia team the usefulness of research data and processes.

5.6.8 Principle Six: Systems Perspectives

System perspectives examine multiple perspectives, world views and values within an intervention. Central to system perspectives is the extent to which the intervention considers multiple causes, had a broad focus, and offered multiple solutions (Oetzel et al. 2018). The example below focused on the extent to which multiple perspectives, world views and values were used in determining and implementing the Whirihia tool solution.

The purpose of the Whirihia tool was to provide a holistic assessment focusing on health and wellbeing need for māmā hapū and whānau. Whānau experience difficulty accessing services, one reason being they are unaware of what services are offered. The aim of the tool was to connect a range of services with whānau that encompasses holistic health. The following are examples of services incorporated in the Whirihia tool; Whare Ora- a healthy homes initiative, mirimiri- massage, cervical screening, and dental services. The essence of the Whirihia tool was to incorporate multiple perspectives, world views and values by combining a range of Kaupapa Māori, Māori led, and non-Māori services. This holistic health approach aims to address numerous issues and aligns to Indigenous aspirations of health and wellbeing.

5.6.9 Principle Seven: System Relationships

System relationships explored whether an understanding of the complex relationships between the following variables, feedback loops, time delays and multi-level effects were considered for an intervention (Oetzel et al. 2018). During the research design phase of this co-design project the system relationship variables were considered.

To ensure the research aim and objectives were achieved, I drafted a schedule of events for this project that included team hui dates, milestones, and due dates. This schedule allowed for opportunities for feedback within the team, anticipated any time delays or items that were out of our control, and involvement of key stakeholders, such as University Human Research Ethics committee and the organisational research protocols for the Whirihia team. As a researcher, understanding, anticipating, and planning for these variables resulted in few barriers to development and implementation of the Whirihia tool and allowed the Whirihia team to focus on the Whirihia tool rather than outside intrusions.

5.6.10 Principle Eight: System Levels

System levels consideration related to the ways in which the intervention targeted change across the macro (iwi [tribe] and national), meso (hapū [sub-tribe] and wider community) and micro (whānau/family and individual) levels (Oetzel et al. 2018).

The Whirihia tool is an intervention that targets change directly at a micro level whilst also indirectly affecting change at the macro and meso levels.

The historical and intergeneration trauma Māori continue to experience contributes significantly to maternal health outcomes (Moewaka Barnes et al. 2013). As indicated earlier in this paper the impact of colonisation on Māori maternities and current issues of ethnic inequities perpetuates a health system that is not conducive toward Māori needs and aspirations. The Whirihia tool is part of a wider scope of work that aims to restore Māori maternities, knowledge, and practices. The Whirihia tool works directly at a micro level with whānau but encourages transformational change within hapū and iwi.

5.6.11 Whirihia Holistic Assessment tool

The co-design project resulted in the development of the Whirihia holistic assessment tool (Whirihia tool; See Appendix Two). The Whirihia tool was a Māori approach to assessing and addressing holistic health needs for māmā hapū by improving access to wrap around support services. These services included, but were not limited to, Whare Ora- a healthy homes service, mirimiri- massage, cervical screening, and dental services. The Whirihia tool identifies health or social need, and then provides a dedicated referral pathway premised on that. The Whirihia tool is designed to compliment engagement with health and social services that participants are introduced to during the Whirihia wānanga, enhancing the relationships between māmā hapū (and their whānau) and health service providers.

The holistic focus of the Whirihia tool allows for a comprehensive health and wellbeing screening, addressing the needs and desires of participants, that extends beyond standard health referral forms. The purposeful selection of services ensures that a rigorous continuous quality improvement process is embedded as part of the Whirihia tool. The Whirihia tool is a ‘living’ resource that is easily modifiable and fit for purpose, meaning new services can be added when relationships are formed or identified as important, by māmā hapū and their whānau.

5.7 Discussion

This paper demonstrates that the HPW framework is a useful tool that supports researchers to work alongside communities to develop authentic co-designed health initiatives for Māori communities. The HPW framework provided the opportunity for critical reflection to explore the intricacies of co-designing the Whirihia tool. My reflections identified three key considerations for researchers undertaking co-design research with Māori communities.

First, co-designed initiatives must be for the betterment of the community.

Aligning with Kaupapa Māori research principles, research must benefit those being researched (Pihama 2005; Macfarlane and Macfarlane 2019). If community do not benefit from research, then there has been a lack of commitment and integrity from the researcher (Walker S et al. 2006). As my findings indicate, a key element of co-designing the Whirihia tool was that the intervention, and the research, benefit Māori. For instance, the example I used under the 'System Levels' principle demonstrated how the Whirihia tool would impact Māori at a micro, meso, and marco level. This systems level thinking assists co-design stakeholders to understand if, and how, interventions support end-users. This process is necessary for Māori communities who have not always been recipients of research benefits (Smith 1999).

Second, as a researcher it is important to identify and reflect on the power imbalances in co-design research to ensure inequities are not exacerbated (Moll et al. 2020). In many Western research approaches, researchers were seen as superior to those they were researching on, with communities experiencing harm as a result (Smith, 1999). However, research that asserts authentic community engagement attempts to create positive power relationships (Wallerstein et al. 2017). The HPW mitigates these hierarchical structures by drawing on the strengths of the community. From my reflections, shared learning and decision-making was recognised and valued as an integral component of the co-design project. This was evident in several examples notably, the initial stages of the co-design project where I as a researcher was able to work with the Whirihia team to co-design a solution for a problem that they had identified. This is a crucial process in ensuring research agendas align to Māori needs and interests as

Western researchers often have a predetermined problem and solution (Smith 1999). For co-design with Māori communities, the skills and attitudes of the practitioner must be tika (correct, accurate, appropriate) and pono (true, valid, honest, genuine) (King P 2021).

Finally, my reflections demonstrate that co-design is not a straightforward process like traditional forms of research. The examples provided demonstrate that for authentic co-design to occur researchers need to be agile and adapt to the needs of the stakeholders. For some, this need may involve the researcher dedicating time and effort to establish meaningful relationships and build trust (Parsons et al. 2016). In other instances, it could involve focusing on priorities of community partners and not the research priorities. This can be a barrier for many researchers particularly Māori who juggle academic parameters, funding constraints, and research community accountability (Webber 2009). To alleviate this, one of the examples I shared was in regard to creating a timeline that anticipates potential limitations and constraints. This process ensured that I was planning for a 'worst case scenario' whilst hoping for the best outcome. This example indicates that a high level of organisation and project management skills are needed to achieve the aims of co-design research.

5.7.1 Limitations of the study

A key advantage of the HPW framework is that it can be used by stakeholders to assess the extent to which each of the eight principles of the HPW framework were applied during the development and implementation of an initiative, in this case the Whirihia tool. One limitation of this paper is that the findings draw on my reflections of the co-design process. Although outside the scope of this paper, the perspective of the Whirihia team would have provided an additional perspective around the extent to which the HPW principles were applied to the co-design of the Whirihia tool. Still, scholars have identified that reflective practices are not actively and intentionally prioritised during research processes (Rarere et al. 2019). This paper has highlighted the need for researchers to consider their positions of privilege and authority within research and the impact these positions can have when undertaking co-design with communities.

5.8 Conclusion

Clearly, co-designing a holistic assessment tool for the Whirihia wānanga is a complex matter. I hope to have provided some reflective examples specifically tailored to support emerging researchers and health professionals who seek to co-design health tools. One of the hardest things about being a reflective researcher is taking on board constructive criticism, knowing our limitations, and accepting these, and looking back at our own work and thinking ‘oh I wish I did that differently’. As Carey (2018) explains, “writing about self as research is not an easy task; however, it can be deeply meaningful, transformative, inspirational to others, and deeply healing” (p.7). This paper is an examination of the messiness, complexities, and warts and all process of endeavouring to co-design a health initiative. As such I have provided practical examples of researcher responsibilities that go beyond the traditional academic parameters, for genuine co-design to take place.

The intention of this paper is to encourage our research community to provide opportunities and platforms for community health initiatives to be foregrounded in academic scholarship. As Māori, we have the solutions to issues that predominantly affect us, we just need the vehicles and tools to make our voices, visibility, and vision, heard.

5.9 Glossary

1. **Māori kupu**	2. **English translation**
3. Aotearoa	4. New Zealand
5. hapū	6. sub-tribes
7. hapūtanga	8. pregnancy
9. hui	10. meeting
11. ipu	12. clay pot
13. iwi	14. tribe
15. Kaupapa Māori	16. Māori ideology incorporating the knowledge, skills, attitudes and values of Māori society.
17. māmā	18. mothers
19. māmā hapū	20. pregnant women
21. Māori	22. Indigenous People of Aotearoa
23. Pākehā	24. non-Māori (most often New Zealand European)
25. pēpi	26. infant
27. pono	28. true, valid, honest, genuine
29. powhiri	30. welcome ceremony
31. te ao Māori	32. Māori world view
33. te reo Māori	34. Māori language
35. tika	36. correct, accurate, appropriate
37. tikanga	38. values and beliefs
39. wahakura	40. woven flax basket that can be used in the parental bed
41. waiata	42. song
43. wānanga	44. workshop
45. whakawhānau	46. birth
47. whakawhanaungatanga	48. relationship/connections
49. whānau	50. family
51. whenua	52. afterbirth; land

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Chapter 6: Experiences of New Zealand Māori mothers' engagement with health and social services post covid-19 2020 lockdown

6.1 Preface

Previous chapters identified that Indigenous Peoples are not prioritised in academic literature in relation to antenatal education. Yet, grey literature evidences several Indigenous antenatal education classes, specifically Kaupapa Māori antenatal wānanga, operating within different communities. Chapter 4 centred on the Māori-led childbirth education class Hapū Wānanga, which received positive endorsement from both Māori and non-Māori participants. One purpose of chapter 4 was to provide evidence-based research in the field of Indigenous antenatal education, contributing to the lack of Māori voice in this area, within academic scholarship.

Chapter 5 contributes further to academic scholarship in the Indigenous antenatal education field, providing a practical example of how a researcher can support a childbirth education class, Whirihia Te Korowai Aroha. The Whirihia holistic assessment tool was a problem, and solution identified by the Whirihia team, and as a researcher I was able to support the co-design of the solution envisaged by the Whirihia team.

Chapter 6 is a subsequent extension of chapter 5 that examined the experiences of Māori māmā, who completed the Whirihia tool, engaging with health and social services. The purpose of this chapter is to identify enablers and barriers that shaped these experiences to better understand what is required to strengthen health services' responsiveness to Māori health needs and aspirations.

The Whirihia Te Korowai Aroha wānanga is Kaupapa Māori however many of the health and social services available to māmā hapū and māmā are not. Therefore, it is vital to identify and understand characteristics of services that provide either a conducive environment for mama and whanau to thrive, or perpetuate inequities. These findings can then contribute to academic scholarship and health policy, to ensure that maternal and infant health services are responsive to Māori health needs and aspirations.

6.2 Article 4- Experiences of New Zealand Māori mothers' engagement with health and social services post Covid-19 2020 lockdown[10]

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6.3 Abstract

6.3.1 Background

Despite universal provision of maternity care, Māori (Indigenous Peoples of Aotearoa), experience significant maternal and infant health disparities compared to their dominant Pākehā (non-Māori) counterparts. Systematic failings create barriers to accessing health services and the provision of quality health care. A holistic assessment tool (Whirihia tool) was developed for a Kaupapa Māori antenatal wānanga (workshop) to address unmet health need and provide a quality referral pathway to health and social services. This paper examined the experiences of postnatal Māori māmā (mothers) engaging with health and social services exploring enablers and barriers to better understand what is required to strengthen health services' responsiveness to Māori health needs and aspirations.

6.3.2 Methods

17 participants completed the Whirihia tool with a subsequent seven māmā participating in a semi-structured, open-ended telephone interview.

6.3.3 Findings

A thematic analysis, underpinned by a mana wahine theoretical perspective produced five themes that encapsulated the experiences of participants' engagement and interactions with health and social services These themes were: autonomy and self-achievement; responsiveness of services; service and system issues; need for greater choice and opportunity; and impact of Covid-19.

6.3.4 Conclusions

This study privileges the voices of these māmā and their experiences navigating a complex, and often, irresponsive health system. When services enabled participants to enact their autonomy and self-determination, participants valued that engagement. To be responsive to Māori health needs and aspirations, services must demonstrate empathy and compassion for māmā and operate in a passive role of support rather than a position of authority and power.

Keywords (4 to 6)

Maternity care; Māori wāhine; qualitative; indigenous health care

6.4 Background

In Aotearoa New Zealand (hereafter Aotearoa) free maternity services are provided to all eligible wāhine (women) (1). Despite universal provision of maternity care, Māori (Indigenous Peoples of Aotearoa) experience significant maternal and infant health disparities compared to their dominant Pākehā (non-Māori) counterparts (2). Infant mortality prevalence, particularly Sudden Unexpected Death in Infancy (SUDI), which accounts for both explained and unexplained infant deaths, is significantly higher among Māori infants (3). Māori infants are overrepresented in other health indicators, such as greater exposure to cigarette smoke and alcohol while in utero, lower-birthweight, significantly higher unintentional injury hospitalisation rates, higher rates of hospital admission for respiratory illnesses, and lower childhood immunisation rates, and they are significantly less likely than non-Māori babies to have been exclusively breastfed when they were three months (13 weeks) old and six months (26 weeks) (4-6). These stark inequities breach the obligations of the nation's foundational document, the Te Tiriti o Waitangi as well as the Declaration of Indigenous Rights which both advance a need for equitable health outcomes (7-9).

There are several factors that impact Māori maternal and infant health outcomes. Colonisation has, and continues to, negatively impact the health and wellbeing of many Māori (10-12). "Colonization fundamentally disrupted Indigenous knowledge systems, establishing epistemic hierarchies that privilege Eurocentric colonial epistemologies and methodologies" (13) (p. 1). Colonisation affected all aspects of traditional Māori maternities (14). Three major factors contributed significantly to the suppression of Māori knowledge and practices.

First, the introduction of Western policies and legislation that dismantled Māori knowledge systems and processes. The work of Māori Tohunga (healers) was outlawed by the Tohunga Suppression Act 1907. The introduction of the Midwives Registration Act 1904 made it "…illegal for anyone not trained under a Western system of midwifery to practise as a midwife, effectively ruling out traditional birth attendants…" (15) (p. 74). This meant that Tohunga who were central to labour and birthing, were forcibly replaced with predominately non-Māori midwives.

Second, prohibiting the use of home births, including marae (ancestral home) (14) and enforcing the use of hospitals (16), negatively impacted how Māori wāhine laboured and birthed their pēpi (baby). The forced use of hospitals meant wāhine were relocated from a place of safety and security to an alien environment that was unfamiliar and ignored tikanga (cultural protocols, principles, and beliefs), ultimately disregarding Māori needs and aspirations.

Third, the assimilation of Western family structures redefined the position and function of Māori wāhine (17). The Western ideals of birthing have marginalised the role of wāhine and tapu (sacredness) of the maternal body (14).

These three factors disrupted traditional Māori pregnancy, birthing, and parenting practices, and contribute to recent negative Māori maternal and infant health outcomes.

A prominent discourse in academic literature, and within health services is, Māori are more likely to present later in their pregnancy, or not at all, to antenatal services (18-21). However, these, and other qualitative studies have found experiences of racism and discrimination to be a primary factor for non-engagement (18-22). Racism is experienced and perpetuated in a range of ways including institutionalised, interpersonal, and internalised racism (23).

The Waitangi Tribunal (4) describe institutional racism as "…a pattern of differential access to material resources, cultural capital, social legitimation and political power that disadvantages one group, while advantaging another" (p. 21). Came et al (2021) argue that the colonial policies (generic or mainstream policy) that are designed for 'all' New Zealanders, privilege non-Māori but have negative implications for Māori health. Further, Makowharemahihi et al. (19) study counters dominant discourse that Māori do not engage with health services and argues that Māori wāhine do engage early but "…system barriers from this first health contact lead to avoidable delays in accessing a seamless maternity care pathway" (p.52).

Interpersonal racism is defined as "prejudice and discrimination, where prejudice means differential assumptions about the abilities, motives and intentions of others according to their race and discrimination means differential actions towards others according to their race" (23) (p. 1212–1213). Bécares and Atatoa-Carr (25) reported a strong correlation between Māori, Pacific, and Asian women's experiences of ethnically motivated attacks by health professionals, and postnatal depression. Thayer et al. (2019) found perceived experiences of racism resulted in lower birth weight, and experiences of discrimination resulted in shorter gestation rates amongst Māori wāhine compared to non-Māori.

Internalised racism is defined as "acceptance by members of the stigmatised races of negative messages about their own abilities and intrinsic worth" (23) (pp. 1213). Houkamau et al. (26) argue that deficit framing and language discourse of being labelled *at risk* and *vulnerable* impedes Māori engagement with health services, affects how Māori are perceived by health professionals and, importantly, how Māori see themselves. Masters-Awatere and Graham (27) argue that Māori have come to expect low standards of care, suggesting that dominant discourses directly impact possibilities for achieving optimal health.

Lack of access to quality health care services is a contributing factor to Māori maternal inequities. Pihama's (20) study found young Māori wāhine are often casted as being *problematic* and *high risk*, especially as teenage mothers. This view is also supported by Lawton et al. (28) who claims "young Māori mothers experience the stigma of being Māori and being teenage mothers. Their babies also experience poorer health outcomes than non- Māori" (p. 247). Stevenson et al. (29) found that "poor communication, separation from baby and/or whānau [family], and poor access to support services impact negatively on birth experiences' (p. 135).

These experiences of racism align to findings in other Māori health studies that focus on the experiences of Māori engaging with health services (30-32). Findings from many of these studies emphasise the need for Kaupapa Māori interventions that prioritise Māori community aspirations to obtaining optimum health (2, 33).

Kaupapa Māori is a "philosophy most often expressed in the delivery of culturally appropriate and relevant services to Māori in the education, health, and welfare sectors. These services are colloquially referred to as "by Māori, for Māori" (34) (p. 1). Kaupapa Māori has been undertaken across numerous disciplines as it is underpinned by Māori self-determination, sovereignty, and aspirations (35). Mana wahine, an extension of KMR theory, is an approach that seeks to privilege the voices and stories of Māori wāhine. At its core, mana wahine is about "making visible the narratives and experiences, in all of their diversity, of Māori women" (36) (p. 11). Though Kaupapa Māori and mana wahine academic scholarship is growing, these studies are limited in number, resulting in a lack of Māori voice in academic scholarship. Specifically, there is a shortage of scholarship centred on postnatal experiences of Māori māmā (mothers).

There is an urgency for the voices of Māori māmā in academic scholarship to be privileged to ensure health policy is responsive to Māori needs and aspirations. In Aotearoa, best practice models that inform policy are premised on Western evidence-based research. A lack of Māori voice in academic scholarship is concerning if best practice models are adopted using evidenced-based research only (37). Further, the unprecedented global pandemic, Covid-19, that has disrupted delivery of health services, could widen the equity gap between Māori and non-Māori if Māori needs are not prioritised (38).

Underpinned by Kaupapa Māori research principles, this paper examines how a mana wahine approach amplifies the lived realities of postnatal Māori māmā engaging with health and social services. Further, this paper explores enablers and barriers that shaped these experiences. Our team understands that Kaupapa Māori research often challenges "…prevailing ideologies of superiority, power relations and social practices that disadvantage Maori" (39) (p. 334). As a result, this paper aims to better understand what is required to enable health services to be responsive to Māori health needs and aspirations.

6.5 Methods

This paper is a small cohort study with 17 participants completing the Whirihia tool and a subsequent seven Māori māmā participated in a semi-structured, open-ended telephone interview exploring their postnatal experiences with service providers over an eight-month period. As defined by Barrett and Nobel[40] "cohort studies are a type of longitudinal study—an approach that follows research participants over a period of time… specifically, cohort studies recruit and follow participants who share a common characteristic, such as a particular occupation or demographic similarity" (p. 95). The following provides context regarding the three data collection phases of the wider research project. This paper is focused on phase three.

6.5.1 Data collection

The first data collection phase occurred in November 2019. Māmā hapū (expectant mothers) from the Kaupapa Māori antenatal class, Whirihia Te Korowai Aroha (Whirihia), were invited to participate in a University of Waikato research project that involved participants completing the Māori-led, and co-designed, Whirihia holistic assessment tool (Whirihia tool). 17 participants consented to the study and completed the Whirihia tool.

Whanaungatanga (a process of introducing and connecting with others, often based on genealogical connections), is an integral part of Māori protocols and customs. This process is an essential principle in Kaupapa Māori research, he kanohi i kitea- a face seen (41). As Jones et al. (42) explains, "in order for a research project to achieve the best possible outcomes, those sharing and collecting information must be able to fully trust those who are ultimately responsible for the analysis, interpretation, reporting and dissemination of that data" (pp. 68).

This process occurred whereby NB introduced herself. First with personal details such as whakapapa (genealogy) and locations attributed to whakapapa, and then with professional details such as a former health professional and current researcher. The details of what the project entailed for participants were then explained, specifically, the three points of data collection. Of note, it was explained that participation was voluntary and those that did not wish to be part of the research were still able to complete the Whirihia tool and be referred into health and social services. This process of informed consent is a core characteristic of Kaupapa Māori research, whereby participants have a right to participate, withdraw, or decline participation in research (43). Subsequently, participants were informed they would be contacted within six months to begin the second phase of data collection.

The second phase involved completion of an electronic survey via a Qualtrics link. A text message was sent to the 17 participants by NB inviting them to participate in phase two and three. Those that did wish to participate were sent the survey link in June 2020, which was active for 4 weeks.

The survey asked participants to recall the services they had requested referral into from the Whirihia antenatal class. We then asked participants to provide a brief outline of the positive and negative experiences of engaging with any health and social services, since the Whirihia antenatal class in November 2019. Responses from the survey were combined with open-ended questions to develop tailored talking points for the third data collection phase. Participants were reminded that participation was voluntary and at the completion of the survey they would be contacted to undertake a phone interview. At the conclusion of the phone interview a koha (token of appreciation) in the form of a voucher was given to participants.

The third data collection phase, which is the focus of this paper, involved telephone interviews conducted by NB. The original intent was to undertake kanohi ki to kanohi (face to face) interviews with participants. This method of engagement is highly valued in Kaupapa Māori research practices, to support the continuity of building rapport and relationships with participants (43). However, the impact of Covid-19 created a state of uncertainty and fear (44) NB noted that as both a researcher and a mama (mother), she did not want to pose any health risk to participants therefore a phone interview was deemed most appropriate.

Of the 17 participants, seven consented to an interview. The interviews ranged in length from 25 minutes to 55 minutes. Demographic data comprising participants age, primp (first time pregnancy), and deprivation index number (the number allocated to geographical location; 1 refers to levels of low deprivation and 10 refers to levels of high deprivation) were collected (see table 1). The ages of māmā varied with one māmā aged between 14 to 18 years, three aged between 19 to 25 years, one between 26 to 30 years, and two between 31 to 35 years. Three māmā had previous tamariki (children) whilst four māmā reported this as their first pēpi (baby). Six of the participants resided in areas with a deprivation index of 9 and 10. The intentional design of tailored questions, based on individual survey responses, shaped the semi-structured interview questions. The tailored questions allowed participants to describe characteristics of their interactions with specific health and social services, that in turn shaped either a positive or negative experience. These semi-structured questions allowed for issues to be explored as they arose and enabled the conversation to progress naturally rather than being a rigid, structured process. The impacts of Covid-19 affected the logistics of our research team, whereby access to resources was limited. Interview notes were taken during, and at the conclusion of each interview, however due to the limited resources available to NB, interviews could not be recorded. The lead author embedded a comprehensive process of reflexivity during the interviews, which involved constant confirmation with participants, to confirm accurate interpretation of data.

Table 5- Participant demographics

Demographic of seven participants		
Demographic		Participant
Socioeconomic Deprivation Index	10	2
	9	4
	3	1
Age (years)	14 to 18	1
	19 to 25	3
	26 to 30	1
	31 to 35	2
Primp (first time pregnant)	No	3
	Yes	4

6.5.2 Analysis

A thematic analysis process, using a mana wahine theoretical perspective, was undertaken by NB. The thematic analysis involved the categorising of patterns and generation of codes, eventuating into themes (45). Underpinned by a mana wahine theoretical perspective, the thematic analysis identified commonalities and differences, within, and across, participants. The reading and re-reading of interview notes allowed for interpretations and meanings of the participants' thoughts and experiences. The identification of repetitive themes reached saturation and five themes were identified. Pseudonyms were assigned to the seven participants.

6.5.3 Ethics approval

Approval from The University of Waikato Human Research Ethics Committee was granted 13 November 2019 HREC(Health)2019#40.

6.6 Findings

Findings from the data analysis led to the establishment of five themes that encapsulated the experiences of participants engagement and interactions with health and social services These themes were: autonomy and self-achievement; responsiveness of services; service and system issues; need for greater choice and opportunity; and impact of Covid-19.

6.6.1 Autonomy and self-achievement

Each of the māmā expressed a desire to craft and enact their own birthing experience. As part of the reconnecting process and building greater rapport with participants, NB invited māmā to share their birth story. Each participant shared aspects of their birthing story, with a majority of participants noting a positive labour and birthing experience. A high level of self-confidence in achieving their desired birth plan was noted by participants. Hinemoana explains one of the highlights of her birth story:

> This was my first baby and it was a natural birth which is what I wanted. During labour I said I wanted an epidural but I didn't end up doing it, yay!

Hinemoana reflected on her birth story with admiration for accomplishing her birth the way she planned. This admiration was shared by Anahera who was able to achieve the natural birth, without medical intervention, she had planned. Although Anahera required subsequent medical intervention after giving birth for second degree tearing, Anahera's sense of self-accomplishment outweighed the subsequent medical intervention.

Aroha, Mere, and Amiria also shared similar experiences, each reporting positive, natural births, with Aroha and Amiria having planned home births. These experiences, coupled with Hinemoana and Anahera's stories demonstrate that the ability to enact autonomy or self-determination over birthing choice is of great importance.

6.6.2 Responsiveness to Māori needs

This theme explores the features of health service provision that contributed to participants having a positive experience during their birthing or parenting journey. Some health service providers created an environment for māmā to practice autonomy and self-determination. The Whirihia wānanga for instance, allowed Anahera access to a range of health providers, one being maternal acupuncture, which aligned well with her aspirations for birth. Hoping to avoid complications during birth, Anahera found acupuncture a natural option to support this outcome. Anahera noted that she “loved it” although the cost to access this support was steep. Anahera exclaims, “I had a good birth outcome and pretty sure [acupuncture] made labour easy”.

After giving birth to her pēpi Aroha described her stay with a local birthing unit as “amazing”. Aroha expanded on why she described her experience this way and gave specific examples to illustrate how this birthing unit shaped her experience.

> The midwife was amazing. The attentiveness of staff, nurse always checking on us. Not intruding, just there to help. They genuinely wanted to get to know us, not tick box. Food was great, actually amazing. [They] left us to ourself, could do our own thing. Gave us space to bond.

The quote by Aroha demonstrates that the birthing unit provided a support role for Aroha and her whānau rather than an authoritative role. This approach created an environment where Aroha was able to make decisions without feeling pressure from outside influences. The feeling of being genuinely cared for by services was highly valued by Aroha and other participants as outlined further below.

Well Child Tamariki Ora (WCTO) provides universal early childhood health and development services to all tamariki under five years and their whānau” (45) (p. 10). Hinemoana shared her positive experiences engaging with a WCTO provider, describing the service as more engaging than a previous WCTO provider her pēpi was enrolled in.

> Instant reply to my text messages. When she [WCTO staff] came to my house she answered my questions. She gave me a book and bath mat. I didn’t get any resources from [previous WCTO provider] even though I was told I should have by [current WCTO provider].

Practical resources were valued by some participants. Mere enjoyed her interaction with a WCTO provider as they were able to provide her with baby clothes and a car seat. This was particularly useful given both her and her partner had no income at the time. Maanaki found one service “really cool” as they supported her and her children with heaters, beds, and bedding. This service also supported Maanaki to liaise with Housing New Zealand and advocate for cost effective heating sources.

Alongside practical resources, participants highly valued the genuine connection and relationship provided by services. As Hinemoana exclaims why she valued her interaction with her WCTO provider. "Their willingness to actually help. Be there to answer questions"- Hinemoana. Maanaki valued the ongoing relationship she had with her Māori midwife who had birthed her previous children, and the ability to "just click" with her.

For Aroha, one service provided a space of support for her pēpi, instilling reassurance and confidence that her pēpi was being cared for.

> Baby is 7months and is in daycare and daycare is fabuolous. Would not take my baby anywhere else, that's why we have to stay in [local]. The daycare is a bit over the top actually 'Diligent' '[it's a] necessity to have a good place'.

6.6.3 Service and system issues

Though māmā identified positive aspects of their interactions engaging in services, several service and system issues reoccurred in each of the shared experiences, resulting in a lack of responsiveness from services.

Mere noted she had a great natural birth but then a bad experience when her pēpi had to be taken to the Newborn Intensive Care Unit (NICU).

> I had a great birth, natural. But then we had to go to the hospital soon after baby was born to NICU. Heaps of blood tests. Procedure wasn't sterile and baby got an infection. The infection went into his heart and lungs, they put an infection in him. The doctors were incompetent. The communication amongst each other was terrible. Baby couldn't have general anaesthetic but the doctor and nurses didn't tell the anaesthetist, and was going to give it to him. My mum had to prompt the doctor and he went to check.

Mere further explains that the bad communication amongst the staff and with her whānau exacerbated the negative experience. A lack of clear and informative communication was present in other participants' experiences. Hinemoana described her interactions with a WCTO nurse:

> There were no text messages or calls back. She [WCTO nurse] just came around and couldn't answer any of my questions, it was horrible. I couldn't understand the nurse. You felt like she was just there to do what she needed and didn't care about what I needed.

Maia echoed similar sentiments, sharing that her WCTO nurse was not able to provide accurate and relevant content in a timely manner.

> They [WCTO nurse] told me things I already knew. It felt really structured they just keep saying, refer to your GP, so I gave up as I was not getting answers for what I wanted. It felt like a tick box, did this, do that. I said to the nurse, maybe you should have these as frequently asked questions, I know other mums want to know this.

These examples shared by Hinemoana and Maia demonstrated that a lack of empathy and care expressed by the health service providers resulted in unmet need. As a consequence, Maia noted that she "gave up" as she was not getting the answers she required. Anahera shares a similar experience with a WTCO nurse that resulted in her feeling an inability to be honest with her WTCO nurse for fear of repercussions.

> I told her that I sleep with baby, got a huge lecture, now I just lie to her. It got to the point where I was like, you can pass this info onto someone else.

Though the examples noted above highlight a lack of responsiveness of service delivery, some māmā received no engagement from any health or social services after the birth of their pēpi. When questioning Aroha as to whether she had received contact from services her response was,

> Kao [no]! No services have engaged with me, heard nothing. I feel that because I didn't have a normal 'mainstream' birth I was lost in the system, and because of covid. I was a bit disappointed though as I talked with a lot of the services at the [Whirihia] wānanga and no one has contacted me. My midwife was awesome, and she made referrals to [four services] but still no follow up.

Aroha's experience demonstrates a severe flaw in service provider referral processes. There were two key points where access barriers could have been addressed, at the Whirihia wānanga, and again when her midwife referred her to four distinct services. Yet, her pēpi is now seven months old and she has yet to receive engagement from any health or social service.

Mere reaffirmed this flaw in service provider referrals explaining that since her pēpi was born she has only received one phone call from a WCTO provider, and no other services. Similarly, Maia noted that she did not receive contact from WCTO services during lockdown and had to initiate engagement with the service.

Though Aroha and Amiria have other tamariki (children), they each highlighted that previous parenting experience does not mean they do not require support, as each pēpi has their own unique needs. As Aroha notes,

> She is my fourth baby, lucky I had experience. She is in good health, feeds good, didn't really need much but even if it's your 10th baby, all babies are different and it takes a village not just an experienced mum.

6.6.4 Need for greater choice and opportunity

Highlighted in many of the participant interviews was a need to have greater choice of health and social services, and opportunities to engage in said services. Hinemoana explains that she attended the Whirihia wānanga because there were no similar programmes offered where she resides. Hinemoana described her reaction to the wānanga.

> I loved it. I loved the hands-on parts of the workshop, making the placenta bowls, the weaving…. My doctor just gave me pamphlets and said read this.

Amiria also found value in the Whirihia wānanga and because it was offered in her locality she attended. The factors of the wānanga that Amiria valued included,

> Māori tikanga (principles and protocols), getting to know other Māori māmā, [and ability to] grab the bits I needed to know.

The preceding narratives demonstrate that the Whirihia wānanga filled a gap for these wahine that other services were not providing. Manaaki shared similar sentiment and goes further with a suggestion to expand the wānanga to fill a greater unmet health need:

> My friend told me about it [Whirihia wānanga]. Was an amazing two days. Would love to attend a focus wānanga group and meet up with everybody again.

Some māmā were unaware of the different health and social services available in their locality. Hinemoana for instance, changed into another WCTO provider after her cousin informed her, she was able to do so. The new service was a Māori WCTO that Hinemoana found greater connection and responsiveness with.

Mere was also with a Māori WCTO provider and although she had to travel to engage with the service, she reported that she was happy to do so. Anahera reported that because of the Whirihia wānanga she was able to connect to maternal acupuncture services and intends on enrolling in infant CPR after becoming aware of the service.

6.6.5 Impact of Covid-19

Participants were asked to describe their experience with health and social services during and after pregnancy. Aroha explained that she had received no engagement with services. Aroha identified that the Covid-19 pandemic was one potential factor for non-engagement.

> Due to covid-19 lockdown, all non-essential services ceased to operate so we weren't sure when and how they'd start back up.

The lack of communication from services, created uncertainty for Aroha, and other participants. Yet, despite having no engagement from services, Aroha appreciated and understood that Covid-19 impacted health services and that these services faced significant challenges.

Amiria shared the impacts the Covid-19 pandemic has had on her and her whānau.

> You just exist! Everyone should have equal. On benefits people get more. I was on maternity pay and it was small but I need to work to top it up. I can't afford day care but I need to work. It's a problem to get ourselves stuff, we are not in poverty, don't have domestic violence. I was working through Covid but not entitled to resources.

Amiria revealed a range of emotions she has experienced as a result of the Covid-19 pandemic. The daily struggles and realities of parenting coupled with the impacts of the pandemic have created an atmosphere of fear and uncertainty. Amiria disclosed numerous issues she is struggling with including balancing work and parenting obligations.

6.7 Discussion

The experiences of māmā shared in this study provided valuable insight into both positive and negative aspects of interacting with health services. Findings revealed positive aspects of participant experiences centred on the ability to enact autonomy and self-achievement over birthing plan and parenting choices. The way in which services enabled, or hindered, participant autonomy contributed to whether māmā had a positive or negative experience with said service. Leveraging off these experiences, this section explores service provider characteristics and factors that support a responsive service, poor quality of service provider delivery, health system failures, and the impacts of Covid-19. Using the experiences of Māori māmā, these areas highlight how health services, and Aotearoa's health system, can be responsive to Māori health needs and aspirations.

6.7.1 Service provider characteristics and factors that support a responsive service

Some participants highlighted positive aspects of their engagement with services, describing specific characteristics of the services that enabled this positive experience. A common thread was the genuine connection and rapport people within those services had with wāhine. Masters-Awatere and Graham's (27) study explored participants' views on barriers and facilitators to accessing health resources and primary care services, revealing that "the combination of listening work, self-autonomy and genuine care for their wellbeing as Māori left participants feeling valued" (p. 473). Walker et al. (47) study evidenced that displays of compassion, warmth, honesty, and respect were highly valued by Māori patients. These qualities were identified by some participants such as Hinemoana who appreciated her WCTO nurses' willingness to help which left Hinemoana feeling that the WCTO nurse genuinely cared for her and her pēpi.

Aroha further explains how the birthing unit she attended created an atmosphere of safety and comfort. Health service providers have a position of authority over medical and care pathways, and often exercise their expert opinions over the beliefs and values of Māori patients, resulting in a reluctance to engage in health services (48). Some providers, often Kaupapa Māori services, work with Māori patients to provide Māori with the ability to make their own informed choice. This work requires service providers to move from positions of authority to roles of support. Aroha experienced this when she engaged with her local birthing unit. Though the unit is not Kaupapa Māori, the service allowed space for Aroha, and her whānau, to transition to this new phase of life in a manner that enabled Aroha to make decisions confidently, whilst feeling supported and cared for.

6.7.2 Poor quality of service provider delivery

Consistent with findings from previous studies focused on Māori experiences of health providers (49), our findings revealed participants had greater incidences of negative experiences when engaging with service providers. The lack of responsive, appropriate, and timely information did not meet the needs of some participants. Mere for instance, described her interaction with one nurse as *horrible*, and Mere was left feeling like the nurse did not genuinely appreciate her. Graham and Masters-Awatere's (22) systematic review found that the "absence of relational connection contributed to ongoing negative narratives between patients and health workers" (p. 197). Janesen et al's (47) findings had similar results with Māori reporting being talked down to or treated with disrespect by staff. However, Jansen et al (43) noted that "when both good communication and good health care provision was experienced, relationship building was reported" (p. 8).

As a result of inappropriate service delivery Anahera reported an inability to confide in the nurse she was engaging with. Distrust in health services is commonly experienced by Māori when engaging with health services (21, 22, 31, 32, 48, 50, 51). Masters-Awatere and Graham (27) findings revealed that "when the bar is so low that a positive experience is determined on the basis of whether the child remains alive at the end of the admission … trust in the public health system is not very high" (p. 475).

Maia's negative interaction, and subsequent withdrawal from the WCTO service, had medical implications for her pēpi. As a consequence of Maia's withdrawal, her pēpi was not being monitored by the WCTO service. Worried about her pēpi's progress, Maia went to her General Practitioner (GP) and was informed that he was underweight and required medication. Upon reflection, Maia was thankful that she took her pēpi to the GP but was unsettled by the notion that, had she experienced a positive interaction with the WCTO nurse, the issue that her pēpi experienced would have been identified and subsequent engagement with GP may not have been necessary.

6.7.3 Health system failures

A key point raised in this paper is that Māori lack choice when it comes to participating in programmes or services. Participants in this study identified a lack of awareness regarding what services are available as well as a lack of culturally appropriate programmes. The former was evidenced by Hinemoana who was unaware of another WCTO provider operating near her residence that she was eligible to enrol in.

Hinemoana also experienced the latter when she travelled from Auckland to Huntly (over an hour's drive) to attend the Whirihia wānanga because she was unaware of any Kaupapa Māori childbirth education (CBE) programmes in her area. The poor accessibility to Māori CBE programmes is consistent with a lack of other Māori health service options, such as a lack of Māori midwives or Kaupapa Māori parenting programmes (4, 21). Māori-led interventions are more inclined to have less resourcing support than Western designed interventions (37). The lack of support afforded to Māori-led interventions perpetuates the use of universal programmes with a 'one-size fits all approach' that does not work for Māori (52).

The Waitangi Tribunal (4) report presents evidence that despite the obligations of Te Tiriti o Waitangi, one reason for the insufficient number of Māori health services is a result of ongoing failures in investment processes determined by Government agencies. To invest in Māori health, the Health and Disability System Review (53) and Came et al. (8) highlight the need to identify what, and where, new investment and disinvestment should occur. To understand which programmes, require new or disinvestment, programmes require monitoring and evaluation to ensure they are meeting the needs of end-users.

The need for evaluation of health interventions is a necessary process for both developers and end-users. For developers, evaluations can ensure accountability and assess the extent of success (54). Kerner (55) argues that without appropriate evaluation processes in place accountability of intervention outcomes can be misdirected or overlooked. For end-users, evaluations can identify the extent to which the intervention involves, impacts, and influences end-user attitudes and behaviours.

Kaupapa Māori Evaluation (KME) is a process that can be implemented into health intervention programmes to ensure a culturally appropriate assessment is undertaken. Carlson et al. (56) argue that KME can meet the "aspirations of co-ownership, mutually beneficial outcomes and shared power" (p.1). KME also considers evaluation processes that recognise Māori values, self-determination, and aspirations. Using KME with a mana wahine approach can challenge dominant hegemonies but most importantly can validate mātauranga Māori (36).

A limitation of this study is the low number of participants to provide an accurate representation of Māori wāhine. While there is growing scholarship on Māori wāhine experiences of health care, there is limited knowledge of how these experiences influence health policy and practice. The points raised in this section pertaining to greater choice of Māori interventions and need for appropriate evaluation to provide investment, or disinvestment, are health system issues. As per the obligations of Te Tiriti o Waitangi, that reaffirmed Māori tino rangatiratanga (self-determination) and promised ōritetanga (equity) (7), Māori wāhine experiences and voices must be central to health system decisions. Therefore, this paper makes a necessary and timely contribution to enhance and improve health services, to benefit Māori māmā and further suggests in depth exploration in this area.

6.7.4 Impacts of Covid-19

On March 23, 2020, Aotearoa imposed a Level 4 elimination strategy to address the introduction of Covid-19 in the country (44). The anticipated effects of Covid-19 on Māori were high given the prevalence of risk factors for Covid-19 (57). King et al. (58) further highlighted concern for Māori whānau and communities. Māori health experts and scholars were particularly worried that inappropriate health services would exacerbate Māori inequities (38, 58). These affects were experienced by some māmā, particularly those who received no engagement from services. Aroha received no engagement from services, and although disappointed, Aroha empathised and provided Covid-19 as a potential reason for non-engagement. Given findings from other Māori health studies that demonstrate a lack of access to services, it is unclear whether Covid-19 impacted engagement or whether Covid-19 was an excuse for non-engagement.

Covid-19 had a negative impact on participants' wellbeing. Amiria disclosed challenges she faced that have negatively impacted her financial, emotional, and social wellbeing. These findings align to Hannah et al's (59) report explaining that Covid-19 has impacted Māori communities, contributing to financial hardship, issues of housing, negative impacts on wellbeing, and increased transmission of vaccination misinformation and disinformation. These issues, including non-engagement from health services, are not new challenges created by the Covid-19 pandemic. Pihama and Lipsham (60) explain that these challenges have been struggles Māori have faced for generations and further stresses the need for Māori be prioritised to ensure equity gaps are not further widened.

6.8 Conclusion

The voice of Māori wahine has been silenced for too long and has resulted in the silencing of their theories and world views. Using a mana wahine approach, this study privileges the voices of these seven wahine and their experiences navigating a complex, and often, irresponsive health system. Autonomy and self-determination were at the forefront of positive experiences. When services enabled participants to enact autonomy and self-determination participants valued their engagement with that service.

To support Māori māmā to have positive experiences with health and social services, this paper identified key service provider delivery barriers and health system failures that require strengthening. These include the need for services to provide responsive, appropriate, and timely information. Also, services need to create genuine connections with māmā, to instil a sense of trust for māmā to be supported to approach services with their concerns and subsequently receive the necessary care to ensure optimal health.

Services that connected with participants and demonstrated a genuine interest for the emotional and physical wellbeing of māmā and pēpi, resulted in a positive experience. If services showed empathy and compassion for māmā and operated in a passive role of support rather than a position of authority and power, services would be more responsive.

6.9 Statements and Declarations[11]

6.9.1 Funding

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6.9.2 Competing Interests

The authors have no competing interests to declare that are relevant to the content of this article.

6.9.3 Author contributions

NB led the research design, collection, and analysis of data, and drafting of the manuscript. LB, PAC, and LTS supported the research design. LB supported the drafting and final proof of the manuscript.

6.9.3 Ethics approval

Approval from The University of Waikato Human Research Ethics Committee was granted 13 November 2019 HREC(Health)2019#40 (appendix 11).

6.9.4 Consent to participate

Participants provided written consent to participate in the research via a research consent form.

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[11] Appendix 14: Co-authorship form article 4 chapter 6

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Chapter 7: Discussion and conclusion

This thesis has made a number of contributions to advance Māori antenatal education. Findings from the previous chapters highlight a clear need for responsive, and relevant, antenatal education classes for Māori. Persistent maternal and infant ethnic inequities between Māori and non-Māori contribute to poorer health outcomes for Māori. Antenatal education has been identified as a critical imperative to improve these health outcomes. Within the paucity of academic scholarship that centres on Māori antenatal education, findings suggest that many Māori do not engage in Western antenatal education services (Dwyer, 2009; Ellis, 1998; Hawaikirangi, 2021). Māori scholars have emphasised the need for appropriate and responsive Kaupapa Māori programmes in this space, to address these low engagement rates, and in turn, reduce gaps in health equity (Edmonds et al., 2022; Moewaka Barnes et al., 2013).

The overarching aim of this thesis is to understand the potential of Kaupapa Māori antenatal wānanga to enhance maternal health outcomes for Māori. The earlier chapters evidenced practical ways in which I, as the researcher, contributed to the Māori antenatal landscape. Chapter 3 exposed a lack of engagement of Indigenous Peoples in antenatal education class, presented in international academic literature. Consequently, it was not possible to understand the experiences of Indigenous Peoples. Given that Indigenous Peoples were absent from studies examined in the systematic review described in chapter 3, it is clear that little consideration is afforded to the antenatal health needs and aspirations of Indigenous Peoples of Aotearoa New Zealand, Australia, Canada, and the United States, at least in this format. This chapter provided a clear rationale for needing to explore, and publish, targeted Indigenous antenatal education interventions that consider culture, language, and wider aspects of holistic health.

Although chapter 3 highlighted a lack of indigenous antenatal education, the chapter also identified that these interventions may be operating in practice and are only absent in academic scholarship. This assumption was explored further in chapter 4 where a Kaupapa Māori childbirth education class, Hapū Wānanga, was operating. Findings in chapter 4, demonstrated that a Kaupapa Māori antenatal wānanga attracts Māori māmā hapū, wider whānau, and non-Māori engagement and endorsement. Furthermore, the chapter countered prevailing assumptions that Māori do not engage with health services and suggested that an indigenous, strengths-based approach to childbirth education service design and delivery, has positive and transformative results for whānau.

The Hapū Wānanga programme therefore offers a means of addressing the stark Māori maternal and infant health inequities highlighted throughout this thesis. However, there is a lack of academic scholarship focused on this, and other, Māori-led initiatives that creates the misconception that there are no appropriate antenatal education interventions for Māori. Hawaikirangi's (2021) Masters thesis concludes that "no previous research has explored how whānau experience wellbeing through Hapū Wānanga" (p. II). This thesis identified several barriers that contribute to a scarcity of academic literature in this area, one being the lack of evaluation and monitoring support afforded to community programmes such as Hapū Wānanga.

Chapter 5 demonstrates a specific example of how support can be afforded to health services. As a researcher I assisted kaimahi (staff) working in the Whirihia team at Whānau Āwhina Plunket to identify areas within their programme that could be strengthened, resulting in the co-design of the Whirihia holistic assessment tool. This solution aimed to connect health and social services with māmā hapū and whānau, minimising barriers of access to health services.

The original intention of chapter 6 was to examine the extent to which the Whirihia holistic assessment tool increased access to health services, however as evidenced in chapter 6, Covid-19 impacted health service delivery in Aotearoa. As a consequence, chapter 6 examined how a mana wahine approach amplifies the lived realities of postnatal Māori māmā engaging with health and social services. Further, this chapter explored contributing enablers and barriers that shaped these experiences. As a result, this chapter aimed to better understand what is required to make services more responsive to Māori health needs and aspirations. Findings showed that the majority of postnatal māmā participants had negative, or no engagement, with health providers. For some māmā this was their first pēpi and although the Covid-19 pandemic was a challenging time, māmā understood and empathised with services for their lack of engagement.

Key findings showed, that to support Māori māmā to have positive experiences with health and social services, key service provider delivery barriers and health system failures require strengthening. These include the need for services to provide responsive, appropriate, and timely information. Also, services need to create genuine connections with māmā, to instil a sense of trust for māmā to be supported to approach services with their concerns and subsequently receive the necessary care to ensure optimal health.

Services that connected with participants and demonstrated a genuine interest for the emotional and physical wellbeing of māmā and pēpi, resulted in a positive experience. If services showed empathy and compassion for māmā and operated in a passive role of support rather than a position of authority and power, services would be more responsive.

This chapter (7) explores four main themes derived from the key findings in the preceding chapters. These themes include wider discussions of health and ultimately impact how antenatal education is shaped in Aotearoa. I then discuss the limitations of this thesis, identify challenges and opportunities in the antenatal education space, and suggest future research directions.

7.1 Language and positioning of Indigenous Peoples

7.1.1 Overview of Indigenous Peoples health

Threaded throughout this thesis is the extent to which Indigenous Peoples' health has been impacted as a direct consequence of, colonisation, racism, and historical trauma; identifying that these issues are still persistent within the contemporary Aotearoa health system (Moewaka Barnes & McCreanor, 2019). For the Indigenous Peoples of Aotearoa, Australia, Canada, and the United States, there is no doubt that colonisation destroyed established systems, created Western hierarchical structures, and ways of knowing and being (Bobowik et al., 2018; MacDonald & Steenbeek, 2015; McCalman & Smith, 2016; Moewaka Barnes & McCreanor, 2019; Paradies, 2016; Trask, 1983; Turia, 2002). "Colonization fundamentally disrupted Indigenous knowledge systems, establishing epistemic hierarchies that privilege Eurocentric colonial epistemologies and methodologies" (Cormack & King, 2021, p. 1). The destruction of these systems is still felt by Indigenous Peoples today and is reflected in the poor health outcomes (Cooke et al., 2007), particularly maternal and infant health outcomes, when measured against non-Indigenous counterparts (Smylie et al., 2010).

Racism is an underlying cause of ethnic inequities (Talamaivao et al., 2021). There is now an important body of research that shows a direct link between racism and poor health outcomes (Came et al., 2018; David et al., 2019; Paradies, 2016; Reid et al., 2019; Simmons-Donaldson & Cormack, 2021; Smedley & Smedley, 2005; Talamaivao et al., 2021; Walsh & Grey, 2019). Further studies have identified that racism is present within maternity services (Dawson et al., 2019; Keirse & Plutzer, 2010; Moewaka Barnes et al., 2013; Stevenson, 2018; Stevenson et al., 2016). The multiple ways in which racism is experienced and perpetuated, range across all types of racism: institutionalised, personally mediated, and internalised (Jones, 2001) when Māori engage with health services. Examples of these include the colonial policies (generic or mainstream policy) that are designed for 'all' New Zealanders (Came et al., 2021) at an institutionalised and systematic level, and health practitioners' beliefs and biases resulting in poor quality of care (Jansen & Smith, 2006; McCreanor & Nairn, 2002). This experience of racism for Māori has been a common theme throughout the previous chapters, and as evidenced by Reid and Robson (2007), racism must be acknowledged, and addressed, to achieve health equity.

Historical trauma, traumatic experiences passed from generation to generation, has been acknowledged in this thesis. Historical trauma is of relevance to Māori where whakapapa and whānau, iwi, and hapū (sub-tribe) have been negatively impacted. Land confiscation (Moewaka Barnes & McCreanor, 2019), multiple 'acts of genocide' across generations (Pihama, 2019), the introduction and assimilation of Christian patriarchal practices (Naylor, 2006), and changes to the structure of interpersonal and family relationships (Wirihana & Smith, 2019), are all examples of historical trauma enacted through colonisation but also still affecting Māori today. Yet, despite the atrocities of the past, and contemporary struggles that Indigenous Peoples still face, we have overcome several challenges, remaining resilient despite the impacts of colonisation and assimilation (MacDonald & Steenbeek, 2015). Māori models of health are a step toward sovereignty over, and autonomy towards, Māori health aspirations.

As identified in earlier chapters, holistic health approaches resonate with Indigenous Peoples. As described in chapter 1, Te Whare Tapa Whā is a health model that aligns to other Indigenous Peoples, holistic concept of health. For instance, Te Whare Tapa Whā (four walls of a house) refers to the four cornerstones of health, with the four realms being; taha wairua (spiritual); taha tinana (physical), taha hinengaro (spiritual), and taha whānau (family) (Purdy, 2020). These four walls represent a whare (house) and if one wall is off balance, the entire house is impacted (Durie, 1985). These four walls constitute a whare (house) and if one wall is off balance, the entire house is impacted. As evidenced in chapter 3, King et al. (2009) reiterates that these characteristics intersect with other Indigenous People's understandings of health and wellbeing.

The use of Te Whare Tapa Whā, as well as other Māori models of health, is a means to consider the contributors that impact negative health statistics, but also to embrace Māori knowledge within the colonial health system. The recognition and acceptance of indigenous knowledge is a key struggle for Indigenous Peoples (Smith, 1999). Regardless of the ongoing work of Sir Mason Durie and other Māori health leaders, the New Zealand health system continues to present Māori in a deficit and individualistic manner both in health literature and within health services.

7.1.2 How Māori are (re)presented in health literature and within health services and the impacts on Māori maternal health and wellbeing

The findings from this thesis highlight two dominant discourses in which Indigenous Peoples are portrayed in health literature and within Western health services. The first, Indigenous Peoples are portrayed in a deficient manner. The second, Indigenous Peoples are not presented at all. The former positioning prioritises Western discourses where there is a firm reliance on discriminatory discursive themes (Came et al., 2021). The latter fails to acknowledge Indigenous identity and sovereignty, in turn disregarding Indigenous Peoples altogether. Both these points will be discussed further in this chapter.

When Indigenous Peoples are represented in health literature or within health services, a deficit discourse is often used (Bryant et al., 2021). Fogarty et al. (2018) explains that,

> 'deficit discourse' refers to discourse that represents people or groups in terms of deficiency – absence, lack or failure. It particularly denotes discourse that narrowly situates responsibility for problems with the affected individuals or communities, overlooking the larger socio-economic structures in which they are embedded

(p. vi).

This deficit underpinning is comprised of narratives focused on "…risk behaviours', usually positioning Indigenous Peoples' health as a problem to be solved" (Bryant et al., 2021, p. 1406). Fogarty et al. (2018) for instance, identified a prevalent 'deficit discourse' across Aboriginal and Torres Strait Islander health policy and practice in Australia. Came et al's (2021) study focused on discursive representations of Māori within health policy over a 10 year period. Findings from their analysis identified that Māori are labelled as 'especially at risk' within health policy.

> Within most policy documents epidemiological data was used to negatively compare Māori with the entire population; often arguing that Māori are most at risk for ill health. Specifically, many policies grouped Māori, Pacific, and low socioeconomic groups together as experiencing poor outcomes, or as having the highest health needs.

(Came et al, 2021, p.342).

As identified throughout this thesis, racism has direct implications on health outcomes. Harris et al. (2019) reports Māori experience higher incidence of racism from health professionals, and other forms of racism, when compared to European. These experiences aligned to unmet need due to perceptions and/or experiences of discrimination (Harris et al., 2019) and such experiences can then have a direct impact on maternal and infant health and wellbeing.

Bécares and Atatoa-Carr's (2016) paper shows,

> strong associations between lifetime and past year experiences of ethnically-motivated interpersonal attacks and unfair treatment on mother's mental health. Māori, Pacific, and Asian women who had experienced unfair treatment by a health professional in their lifetime were 66 % more likely to suffer from postnatal depression, compared to women who did not report these experiences.

(pp. 1).

These impacts were further exacerbated if "…both the mother and the partner had experienced a racist attack" (Bécares & Atatoa-Carr, 2016, p. 1). A second study by

Thayer et al. (2019) found that perceived discrimination of Māori in situations such as 'unfair treatment at work' and 'acquiring housing' were associated with low birth weight. Whilst discrimination in the form of "…an ethnically motivated physical attack… unfair treatment in the workplace… in the criminal justice system… or in banking… were associated with significantly short gestation (Thayer et al., 2019, p. 1). These findings indicate that discrimination does not have to take place in health services to affect birth outcomes. The physical, mental, and emotional stressors that māmā hapū endure in their daily lives impacts maternal and infant health.

Negative labelling, stereotyping, and language used by researchers, and within health services, to describe Māori and other Indigenous Peoples, was a recurring point throughout the earlier chapters of this thesis. For instance, articles identified in chapter 3 of this thesis used language such as 'hard to reach' and 'at-risk' to describe participants that are not as forthcoming to health services as the dominate ethnic population group. The use of terms such as 'hard to reach' has benefited researchers and health services alike. One Aotearoa based research and consulting firm takes pride in using the term 'hard to reach' to describe gang members and claim that 'hard to reach' is "…preferred because it describes Māori communities…" (H2R Research and Consulting, n.d.). Kidd et al. (2021) revealed that the New Zealand Primary Health Care Strategy's use of the terms 'special' and 'hard to reach' to describe Māori, diminishes the status of Māori as sovereign Treaty partners.

The impact of deficit framing is that health services reinforce negative stereotypes of Māori. As a result, some Māori accept the idea that they deserve a less than satisfactory standard of care. Chapter 6 reported that wahine "did not want to make a fuss" as a response to non-engagement with health services. Despite no one contacting them after their pēpi was born, wahine showed compassion and understanding for non-engagement of services. Māori have come to expect low standards of care (Masters-Awatere & Graham, 2019). The māmā in chapter 6 not only accepted health services lack of engagement but provided potential reasons as to why these services did not engage.

A tendency to blame the individual rather than inappropriate health services or interventions is a key driver for why Māori do not engage with antenatal health services (Cram et al., 2003). Many Māori are forced to "…bear the labels assigned to them by a dualistic system of differentiation… rather than questioning the assumptions behind a norm that bases its rationale on Western thought" (Bae, 2021, p. 261). Dominant health literature discourse suggests that many Māori fail to engage in health services. However, as highlighted in chapter 2, individual blame is an easier explanation for health services to accept rather than having to invest time, effort, and money to scrutinise the shortcomings of the particular services Māori are 'failing' to access.

Laverack's (2017) findings however challenge the belief that Māori do not want to engage with services by stating that people "…want to participate [in health interventions] and will do so in large numbers if they are properly engaged and have a shared interest in the program" (p. 3). This reframing affirms that focus should be on services, and those designing them, rather than constructed by stereotypical ideals. Dr Naomi Simmonds' (2014) thesis, focused on Māori maternities and geographies, challenges people to,

> …reimagine the single story that is presented through colonialism about Māori birthing, and Māori maternities more generally. It is important to ask what this story does to undermine the individual and collective experiences of Māori women and whānau, to ask what and who is missing, and to ask what their own locations, judgements, assumptions and prejudice do to either affirm and support, or challenge and resist this story
>
> (Simmonds, 2014, p. 259).

Bae (2021) shares similar sentiment and highlights the lost knowledge when judgment is based on dominant understandings and values. "The potential richness within the Other's conceptions of the world becomes invisible to those who operate within this power relation, as they are blinded by the brilliance of modern disciplinary power" (Bae, 2021, p. 261). In contrast to deficit discourses, a strengths-based approach, discussed further in this section, provides an opportunity for Indigenous aspirations to be privileged.

The examples provided above demonstrate that Māori are frequently portrayed from a deficit perspective and that "…these [deficit] approaches are often deeply racialised, being produced through ongoing settler–colonial relations that position Whiteness as the norm, and which privilege Western forms of knowledge and ways of living as superior to Indigenous ways of knowing and being" (Bryant et al., 2021, p. 1406). As signalled earlier in this section, getting Western health systems to recognise and accept Indigenous knowledge is a struggle for Indigenous Peoples. As Hudson et al. (2016) suggest, Indigenous Peoples are faced with having to prove "…the authenticity and control over their forms of knowledge, and right to govern participation in research" (p. 166). Having to validate the legitimacy of Indigenous knowledge is one challenge, but in some instances Indigenous Peoples are disregarded altogether.

Research initiatives "remain anchored to Western oriented values, processes and motivations (Macfarlane & Macfarlane, 2019, p. 48). By design, this positioning ultimately means that conflicting perspectives are considered 'other' or 'the alternative'. Those who are deemed to be 'other' are seen as inferior to the dominant ideology. "The West represents particular views of human nature and morality, and those who do not possess this social knowledge are placed in the position of savages – less-than-humans who need to be repressed and disciplined" (Bae, 2021, p. 261).

This leads into the second point of this section, that Indigenous Peoples are not represented at all. As highlighted in chapter 3, Indigenous Peoples are often not afforded the right to be recognised as Indigenous, and therefore, are not recognised nor represented in academic literature. Article 33 section 1 of the United Nations Declaration on the Rights of Indigenous Peoples states that "Indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions" (United Nations General Assembley, 2007, p. 10). Cultural identity is a critical component of health and wellbeing (Durie, 1997). Kukutai et al. (2020) provide an overview of identity and the importance of cultural connectedness. Findings from their study conclude that "…higher levels of cultural connectedness among tamariki Māori, which are associated with diverse family forms, seem to promote socio-emotional development (Kukutai et al., 2020, p. 70). Though there is strong association between Māori cultural identity and increased health and wellbeing, McIntosh et al. (2021) stress that "…the interconnections between health and wellbeing with the landscape and the subsequent shaping of Māori identity are under-represented in current healthcare models" (p. 144). Within health literature and health services a prerequisite of this is self-identification. Self-identification is the right to be counted (Robson, Purdie, et al., 2007) and asserting this right is shared by all

Indigenous Peoples. However, quality ethnicity data is an issue in the Aotearoa health system.

The collection, and dissemination of quality ethnicity data is a requirement of Aotearoa health services. Within the Operational Policy Framework 2018/2019, section 3.10.3 states, "each DHB must provide relevant information, including ethnicity data, to Māori to enable Māori to participate in, and contribute to, strategies for Māori health improvement" (Ministry of Health, 2019, p. 16). Despite the Operational Policy Framework contractually requiring that District Health Boards (DHBs) provide relevant information, including ethnicity data, to Māori, the 'Hauora Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry: WAI 2575' findings showed that "…district health boards are not consistently complying with the obligations in their contracts" (Waitangi Tribunal, 2019, p. 133). The report further suggests that, "the onus for this responsibility is mostly on district health boards but is also on the Ministry for not holding them accountable for insufficient action" (Waitangi Tribunal, 2019, p. 133).

The deficit positioning within health services and lack of presence in academic literature, is a concern for Indigenous scholars and Indigenous health professionals alike. Within literature many studies speak to the perceived failures of Indigenous Peoples through a Western lens, noting that Indigenous Peoples are "…prone to ill health and in need of intervention" (Bryant et al, 2021, p. 1406). This positioning lacks the voice and expertise of Indigenous Peoples, and instead suggests that research of this nature is for the benefit of the researcher rather than those being researched. The latter is a concern that Professor Linda Tuhiwai Smith highlighted more than 20 years ago (Smith, 1999).

7.1.3 Strengths-based approach

Strengths-based approaches foreground Indigenous self-determination, premised on the strengths and capabilities of Indigenous Peoples (Adcock et al., 2019; Brough et al., 2007; Bryant et al., 2021). Within Te Ao Māori, strengths-based approaches are mana enhancing. 'Mana' encompasses links between the spiritual, physical, and natural realms (Ruwhiu, 2022). Ruwhiu (2022) further explains that mana-enhancing behaviour is about ensuring the interactions between those realms are advantageous. In direct contrast to deficit framing, strengths-based approaches challenge the assumptions and negative ideologies informed by discursive discourses. Bryant et al (2021) further explains,

> strengths-based approaches have important political objectives. By focusing on the 'good stories', they reframe the expectations and opportunities presented in institutional policies, programmes and interventions, and can disrupt internalised assumptions about deficit, rendering visible the capability, humanity and diversity of Indigenous peoples.

(p. 1406)

Importantly, strengths-based approaches align to the principles of Kaupapa Māori research and mana wahine methodology used in this thesis. One purpose of this thesis has been to contribute positively to Māori maternal and infant health outcomes. By extension, this purpose took on board the elements of strengthens-based approaches.

The on boarding of strengths-based approaches is evidenced in Chapters 3, 4, 5, and 6, where focus was foregrounded on Māori voices and experiences. Though each chapter comprised different research activities, each sought to create transformational change for Indigenous and/or Māori.

Chapter 3 attests that targeted antenatal interventions that prioritise culture have positive results for participants. However, the lack of Indigenous voice in studies examined meant Indigenous experiences were unable to be highlighted. Still, I emphasised the absence of Indigenous voice was a breach of the Declaration of Indigenous Rights, and that as an Indigenous person, speaking humbly on behalf of other Indigenous Peoples, we have the right to be counted. Though I was unable to foreground Indigenous voice due to the lack of Indigenous representation in the systematic review, I articulated the need for a platform for Indigenous voices to be heard.

Chapter 4 also emphasised the prioritisation of culture as a valued factor in Hapū Wānanga. Further, chapter 4 used the Kaupapa Māori designed and delivered antenatal wānanga as an example of a strengths-based programme. The holistic approach and encompassment of Te Ao Māori knowledge, systems, and practices are key attributes that participants valued. Findings in this chapter challenge notions that Māori do not engage with antenatal services, or are 'hard to reach'. The Hapū Wānanga is a testament to the fact that appropriate and responsive interventions does attract Māori.

As highlighted in the literature review section of this thesis, there are several Kaupapa Māori antenatal wānanga across Aotearoa. However, many operate in siloed pockets of the country and advertisement of these programmes are largely through social media, websites, or word of mouth. Table 6 are examples of Kaupapa Māori antenatal wānanga in Aotearoa. This is a snapshot of programmes on offer.

Table 6- Examples of Kaupapa Māori antenatal wānanga in Aotearoa

Source location	**Programme name/service**	**Location in Aotearoa**
Website	Poipoia te Mokopuna	South Auckland
Website	Te Ao Hou Trust	Ōpōtiki
Website	Te Ha Ora	Ōpōtiki
Website	Kaupapa Māori Antenatal and Kaiāwhina Education (MAKE)	Lower Hutt
Website	Whānau Mai – Antenatal Education	Ōtautahi (Chirstchurch)
Website/Facebook	Whirihia Te Korowai Aroha	Kirikiriroa (Hamilton) and Waikato
Website/Facebook	Hapū Wānanga Ki Tainui	Waikato
Website/Facebook	Hapū Wānanga Nelson	Nelson
Website/Facebook	Hapū Wānanga Taranaki	Taranaki
Website/Facebook	Hapū Māmā Rotorua	Rotorua
Website/Facebook	Ngāti Whatua Orakei	Orakei
Website/Facebook	Huna Trust Hei Tiki Pumau kaupapa antenatal programme	Tauranga

Chapter 5 is an example of both a strengths-based research approach and resulting intervention. The relationship between myself as the researcher and the Whirihia team showed a genuine partnership and authentic co-design process premised on the principles of the He Pikinga Waiora Implementation Framework. A similar research approach and resulting intervention to the Whirihia Holistic Assessment tool is the 'He Korowai Manaaki: mapping assets to inform a strengths-based, Indigenous-led wrap-around maternity pathway' study. In this study Adcock et al. (2019) explored the partnership between iwi and researchers to develop an iwi initiated maternity pathway tool. The core characteristics of the research included,

> being Iwi-initiated; community identification of strengths and assets; guidance by a community steering group; contribution to local Māori research capacity; and the development of a community-led augmented maternity care pathway that is now being delivered through primary care.
>
> (Adcock et al., 2019, p. 509).

These characteristics align to features demonstrated throughout the previous chapters of this thesis, with examples highlighted in the previous paragraphs.

Still, despite the potential of a strengths-based approach to address health inequities experienced by Māori māmā hapū and pēpi, my findings showed a lack of Māori voice in academic scholarship. This is particularly concerning if 'best practice models' are adopted using evidence-based research (Social Wellbeing Agency, 2022). Health programmes in Aotearoa generally focus on Western understandings of health, and the interventions that result are often designed, led, and implemented by non-Māori (Rolleston et al., 2020). Antenatal education is underpinned by mandatory Western knowledge and content (Ministry of Health, 2015). There is a sense of hypocrisy within the New Zealand health system, whereby Māori knowledge is not a requirement of antenatal education delivery, yet government strategies and documents articulate the prioritisation of reducing health inequities for Māori. It is important to explore whether antenatal education programmes prioritise Māori, and how this is measured. This leads onto the next theme examining the role of evaluation and monitoring of childbirth education classes (CBE).

7.2 Evaluation and monitoring of health initiatives

Health interventions tend to be complex and content dependant, therefore evaluation and monitoring of such initiatives must be evidenced for their effectiveness (Rychetnik et al., 2002). Measuring solely the number of pregnant women attending CBE is not an accurate indication of participant engagement or endorsement. Appropriate evaluations of CBE classes is needed to determine whether they are effective for end-users. Importantly, it is vital to examine if, and how, CBE classes make a meaningful and transformational impact for whānau. Moreover, evaluations can support financial decisions of future investment into programmes, and potential disinvestment for services that are not delivering for end-users. This section expands on these points.

7.2.1 Evaluation- purpose and role in health

The need for evaluation of health interventions is a necessary process for both developers and end-users. For developers, evaluations can ensure accountability and assess the extent of success (Rarere et al., 2019). Kerner (2008) argues that without appropriate evaluation processes in place accountability of intervention outcomes can be misdirected or overlooked. For end-users, evaluations can identify the extent to which the intervention involves, impacts, and influences end-user attitudes and behaviours.

From a systems level, evaluation and monitoring of health services is a means of demonstrating Indigenous sovereignty. As highlighted in chapter 1, The United Nations 'Declaration on the Rights of Indigenous Peoples' gives international recognition for Indigenous Peoples right to self-determination (United Nations General Assembley, 2007). Came et al. (2021) explains that articles within the 'Declaration on the Rights of Indigenous Peoples' "…guarantee Indigenous peoples the right to improve their health, their development, and to enjoy the highest attainable standard of health" (p.338). However, Megan Davis Director of the Indigenous Law Centre and Senior lecturer, University of New South Wales stresses that, although the precedence set by the United Nations puts moral weight behind the rights of Indigenous peoples, the Declaration "…has no binding force in international law and therefore does not create any legal obligations'…" (Davis, 2007, p. 55). Although there is no legal precedence to enact this as law within all countries, the Declaration is a powerful "…reminder of the impact of dispossession and the historical and contemporaneous human rights violations of Indigenous peoples" (Davis, 2007, p. 61). The persistent and entrenched ethnic health inequities is a breach of the Declaration, and specific to Māori, a breach of Te Tiriti o Waitangi.

Evaluation and monitoring of health services is a requirement of the Crown under Te Titiri o Waitangi (Came et al., 2020). Reid and Robson (2007) explain that "Māori have the right to monitor the Crown and to evaluate Crown action and inaction" (pp. 3). The 'Hauora Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry: WAI 2575' identified several breaches of Te Tiriti o Waitangi within the health sector in relation to primary care, legislation, and health policy (Waitangi Tribunal, 2019). Findings from the report argue that the Crown has failed to deliver equitable health outcomes for Māori and is therefore in breach of te Tiriti o Waitangi. Came et al's (2020) critical analysis resulted in recommendations that compliment findings in the Waitangi Tribunal (2019) report. One recommendation was to "…embed equitable and non-racist practices in policy development, delivery, and evaluation" (Came et al., 2020, p. 211).

Currently, there are insufficient evaluation and monitoring systems and processes in place to support the implementation and development of health interventions. As Harding and Oetzel (2019) explain, "despite extensive public health research on the efficacy and effectiveness of health promotion and disease prevention strategies, methods for disseminating these interventions and encouraging their implementation and wide-spread adoption are not well developed or evaluated" (pp. 2). Indigenous scholars have identified a strong need to strengthen Indigenous content and engagement in health policy (Came et al., 2021; Gracey & King, 2009; Reid & Robson, 2007). A study based in the United States attests that inappropriate health services that do not resonate with intended end-users will have little to no impact on health outcomes. "…Despite reporting higher levels of prenatal counselling on a variety of health-related topics, women from disadvantaged groups continue to experience higher rates of adverse birth outcomes suggesting that prenatal education is insufficient in reducing disparities" (Nguyen et al., 2019, p. 164). The authors go further to say, "the evaluation of the current prenatal health education and the inclusion of other forms of intervention may be necessary to ensure positive behaviors and birth outcomes" (Nguyen et al., 2019, p. 164). Māori are one end-user group that have been subjected to inappropriate and harmful health interventions (Robson, Harris, et al., 2007). The lack of evaluation of Māori developed CBE services may well contribute to these outcomes.

Māori-led interventions are more inclined to have less resourcing support than Western designed interventions, lacking long-term and sustainable resourcing and/or funding (Social Wellbeing Agency, 2022). The lack of support afforded to Māori-led interventions perpetuates the use of universal programmes with a 'one-size fits all approach' that does not work for Māori. As the Waitangi Tribunal (2017) explains,

> a 'one size fits all' model tends in practice to suit the needs of the majority, who are rarely the group in most need of help. Even when they can access mainstream aid and services, minority groups such

> as Māori have often found that what is being provided simply does not work for them, or is so alienating that they prefer to disengage.
>
> (pp. 3776-3777).

As signalled earlier, evaluation and monitoring of health services for Māori is an obligation under Te Tiriti o Waitangi. It is therefore imperative that appropriate evaluation and monitoring processes be embedded within antenatal education delivery. Chapter 4 of this thesis identified Hapū Wānanga as a programme of value to end-users. The chapter also alluded to a lack of support around evaluation and monitoring which has made implementation, delivery, and sustainability of this programme challenging. The following section investigates the issues of evaluation and monitoring of CBE classes in Aotearoa.

7.2.2 Issues with not evaluating and monitoring health services- ‘pragmatics’ and ‘rhetoric vs reality’

Prior to the new health system structure effective of the 1st July 2022, the commissioning of pregnancy and parenting classes within the Waikato DHB region was managed by the Waikato DHB strategy and funding department. The Waikato DHB held service level agreements with a Waikato DHB service provider arm, and community health providers, for the delivery of CBE classes. Payment was based on ‘per pregnant woman’ successfully attending the class. This contractual arrangement has created several barriers for Māori CBE providers.

One such barrier is a restriction on the number of attendees. CBE providers face two competing issues. The first, facilitating classes that have a higher amount of pregnant woman and limiting wider whānau attendance to ensure payment. The second, limiting the number of pregnant women per class to accommodate wider whānau attendance, at the risk of receiving less funding. Each choice has either a negative cultural or financial implication. The first option, to have more pregnant women and less whānau in attendance, is in direct conflict to fundamental Kaupapa Māori beliefs, and likely to reduce CBE effectiveness. As highlighted in chapter 1, whānau are at the core of Te Ao Māori (Māori worldview) and holistic models of health (Durie, 2004). The Hapū

Wānanga programme encourages whānau participation and as seen in chapter 4, is one of the key features that has received participant endorsement.

CBE providers must also contend with venue confinements that often restrict the number of participants in classes. Whirihia and Hapū Wānanga classes take place throughout the Waikato DHB region. At times, venues are limited to the amount of people that can comfortably fit, as well as for health and safety reasons. But venues are extremely important as evidenced in Koushede et al.'s (2017) study on antenatal small-class education versus auditorium-based lectures. Hapū Wānanga and Whirihia both utilise one of the local birthing units in Hamilton City, to facilitate classes. This has been of value to participants given that some birth their pēpi or use the facility postnatally. The space afforded to the wānanga is relatively small therefore classes have a maximum capacity that is quickly filled by whānau attending with māmā hapū. Due to the high demand of participants wanting to attend, spaces fill quickly, and priority is afforded to those where their expected birth date is closer to the wānanga date (Kelly- Child Birth Educator- Waikato, 2021). Despite the restriction in participant numbers, whānau support is not compromised.

The importance of a whānau ora approach to health services is at odds with the reality of contractual arrangements. The need to limit the amount of whānau is in direct contrast to imperatives and priorities highlighted in the 'Achieving equity in health outcomes: highlights of important national and international papers' (Ministry of Health, 2018), New Zealand Health Strategy (Minister of Health, 2016), and He Korowai Oranga: Māori Health Strategy (King & Turia, 2002) documents. All three documents encourage health services to take a whānau ora approach, yet the contracts and monitoring outcomes do not support that imperative. If Kaupapa Māori antenatal classes opt to have whānau attend they receive reduced funding to ensure they provide a whānau environment. This indicates that the health systems does not value the importance of whānau, nor support health services to deliver a whānau ora approach.

7.2.3 Need to appropriately resource CBE classes in Aotearoa

As explained, evaluations are necessary to ensure the effectiveness of health interventions, particularly whether they are equity positive (reduce inequity), equity neutral (no difference), or equity negative (increase inequity) (Brown et al., 2014). In many cases within the Aotearoa health system, Kaupapa Māori health programmes are measured against Western standards. "[There is] disconnect between the theoretical assumption that Kaupapa Māori programmes are best placed to support Māori health outcomes and the acceptability of the robust evidence for such an approach when such evidence is still critiqued against a non-Māori standard" (Rolleston et al., 2020, p. 134). In relation to CBE classes in Aotearoa, all Ministry of Health publicly funded pregnancy and parenting classes, including Hapū Wānanga and Whirihia Te Korowai Aroha, are measured on the number of pregnant women that attend. As a consequence of using this metric as an indication of success, it can depict the classes noted above as 'unsuccessful', especially when compared to other programmes that have higher rates of pregnant women in attendance. The exclusion of whānau as active participants is not taken into reporting considerations, nor are the experiences of participants attending the programme.

Associated with evaluation and monitoring is the need for adequate resourcing. Inadequate resourcing has been identified as a barrier to the successful implementation and ongoing provision of health interventions in Aotearoa and abroad (Esbati et al., 2019; Foster et al., 2018; Geerligs et al., 2018). For some health interventions, resourcing may only be given for a short duration with no thought to the longevity and sustainability of the intervention (Harding, 2021). Duran et al.'s (2010) study based in the United States explains that, "federal and state public health agencies often mandate the use of evidence-based interventions without providing sufficient resources or time…" (p. 111).

In 2014 an independent review was undertaken of Aotearoa's health funding systems; a central theme of the review was 'resourcing'. The New Zealand Health Strategy addresses several of the reviews findings and highlights three ways in which funding arrangements prevent resources from being used to achieve the best possible outcomes;

> - Present arrangements may not clearly show the results that we get from health spending, making it hard to prioritise funding or take into account long-term, cross-sectoral benefits from investment.
> - When demand changes, service mix and design may not change quickly enough to deal with it. Often our funding

> and contracting arrangements encourage health services to keep doing things as they have always done them, instead of allowing them to work differently.
>
> - Some funding arrangements contribute to disparities between groups in their access to services, and sometimes they widen the gap in unmet need.
>
> (Minister of Health, 2016, p. 11).

Each of the three points highlighted above directly contribute to resourcing issues for antenatal education classes.

The first point aligns to the lack of evaluation provision afforded to CBE providers, and extent to which Māori-led CBE classes impact end-users. As discussed earlier, CBE providers are funded based on 'per pregnant woman' attendance. This arrangement does not take into consideration wider benefits associated with health spending. The health system in Aotearoa is a siloed system (Gauld, 2016) including the way health services are designed and funded. As signalled in chapter 3, siloed health programmes are failing many Indigenous and minority peoples. As evidenced in chapter 4, the outcomes of Kaupapa Māori CBE classes extend beyond 'numbers in attendance' and impact participant knowledge and behaviour. Adopting a commissioning for outcomes approach for CBE classes may show greater alignment between health spending and where to prioritise funding.

Lakhotia (2021) explains that "commissioning, in general, refers to the authorisation and funding of public services. It is not about purchasing a commodity but delivering a service" (pp. 150). Commissioning of health outcomes rather than siloed investment, is an arrangement that would showcase the strengthens of Kaupapa Māori CBE classes, and importantly, the outcomes of relevance to Māori end-users. "Commissioning can play a central role in transforming the way public services are designed and delivered. When implemented well, commissioning can ensure high-quality services that provide real value to the stakeholders and account for effective actions with given resources" (Lakhotia, 2021, pp. 160). An effective evaluation method that aligns to commissioning funding principles is Kaupapa Māori Evaluation (KME).

KME is a process that can be implemented into health intervention programmes to ensure a culturally appropriate assessment is undertaken. Carlson et al. (2017) argue that KME can meet the "aspirations of co-ownership, mutually beneficial outcomes and shared power" (p.1). KME also considers evaluation processes that recognise Māori values, self-determination, and aspirations. Coupled with commissioning for outcomes funding, KME can prioritise funding and take into account long-term, cross-sectional benefits from investment.

Funding contracts drive health service behaviour, aligns to the second point of the New Zealand Health Strategy.

> When demand changes, service mix and design may not change quickly enough to deal with it. Often our funding and contracting arrangements encourage health services to keep doing things as they have always done them, instead of allowing them to work differently
>
> (Minister of Health, 2016, p. 11).

Aside from the incentive to increase the number of pregnant women who attend antenatal classes, there is no encouragement or support offered to programmes to monitor their effectiveness for end-users. The data collected in chapter 4 from the Hapū Wānanga programme, was as a result of the programme facilitators embedding a quality assurance process to their programme. This process was in the form of a post course survey that measured the programme's quality, impact on levels of knowledge and understanding, and the overall experiences and views of participants. This process was added to the programme as facilitators are continuously exploring avenues for improvement, but also to highlight the strengths of the programme, to determine the value on end-users. This work goes beyond the contractual arrangements set forth by the funder, whose interests are predominately on the number and demographics of pregnant women attending the sessions. The current contracting arrangements encourage CBE providers to 'keep doing things as they have always done them'. Admiration must be afforded to the Hapū Wānanga team who go beyond contractual obligations to ensure their programme is of value to those who need it most.

The third point, "some funding arrangements contribute to disparities between groups in their access to services, and sometimes they widen the gap in unmet need" (Minister of Health, 2016, p. 11), relates to current funding arrangements that provide no incentive for health services to provide an atmosphere that values Māori knowledge and practices. The fundamental component of Te Ao Māori is whānau, and this is actively discouraged by current funding arrangements. The Waitangi Tribunal (2019) found,

> …the funding arrangements for the primary health care system disadvantage primary health organisations and providers that predominately serve high-needs populations, particularly Māori primary health organisations and providers. The Crown has been aware of these failures for well over a decade but has failed to adequately amend or replace the current funding arrangements.

(pp. xiii).

One primary purpose of evaluation for health policy is to identify programmes for investment. 'Active protection' is one of the key principles of te Tiriti o Waitangi. As part of active protection, The Waitangi Tribunal (2019) found that

> the Crown must ensure its agents are performing well and, where they are not, the Crown must make a reasonable effort to improve performance. This applies both to those agents who are responsible for any part of health services design and provision and to those agents responsible for monitoring these activities

(pp. 32).

One key finding of the Health and Disability System Review (2020) report was the need to invest in Māori health. Came et al. (2020) further exclaim that health policy must identify what, and where, new investment and disinvestment should occur. Instead of continuing to fund CBE providers because that has been the standard process, funders must implement appropriate evaluating and monitoring techniques, then be proactive to disinvest in ineffective health services.

The lack of current evaluation and monitoring process for CBE classes is negatively affecting Māori māmā hapū and whānau. Findings in this thesis demonstrate that despite systematic challenges, and contradictions of health priorities, Hapū Wānanga is meeting the needs of Māori, and non-Māori māmā hapū and whānau. The discussions presented in this section highlight three key steps that can support Māori-led CBE providers.

First, determine the extent to which CBE classes are meeting Māori end-user needs. Second, using findings from end-user experiences as a foundation, reorient the Ministry of Health pregnancy and parenting services specifications to ensure appropriate content is prioritised in CBE classes, particular Māori knowledge. Third, adequately resource CBE providers who can deliver programmes that meet the needs of Māori end-users. With the new Te Whatu Ora Health New Zealand and Te Aka Whai Ora Māori Health Authority, now is the time to merge the stated objectives, with reality, to authentically meet the needs of māmā hapū and whānau.

7.3 Co-design and Kaupapa Māori spectrum

The preceding sections of this chapter have explored the issues, and potential strengths, of resourcing, evaluation, and monitoring of CBE programmes. Appropriate evaluation and monitoring processes are needed to grow and support responsive CBE programmes for Māori. This next section explores two similar, yet distinctive, research activities within this thesis; 'co-design' and 'Kaupapa Māori research'.

As signalled in chapter 2 the work within this thesis is grounded in Kaupapa Māori principles. I live and breathe Kaupapa Māori and I feel that the essence of what Kaupapa Māori is and stands for has been captured throughout chapters 4, 5, and 6. Yet, I found myself questioning the need to do co-design if I was doing Kaupapa Māori research? Specifically, why did I opt for chapter 5 to be "reflections on the 'co-design' process of a holistic assessment tool for a Kaupapa Māori antenatal wānanga (workshop)" rather than reflections on the 'Kaupapa Māori research' process of a holistic assessment tool for a Kaupapa Māori antenatal wānanga (workshop)"? These questions were an important consideration across each of the chapters in this thesis. In what follows I will discuss the relationship between co-design and Kaupapa Māori. I use the analogy of a spectrum to discuss where my research is situated. The findings from previous chapters demonstrate a need for Indigenous voices to be privileged in both academic literature as well as in the development and implementation of health interventions. My intention with this discussion is to understand the relationship between these two ideologies and what potential implications there are for Indigenous Peoples.

7.3.1 What is co-design?

Co-design is a relatively new term used to describe a "philosophical approach and evolving set of methodologies for involving people in the design of the services, strategies, environments, policies, processes- that impact them" (Mark & Hagen, 2020, p. 4). Though there is academic scholarship both nationally and internationally centring on co-design practices (Dietrich et al., 2017; Donetto et al., 2015; Harding & Oetzel, 2019; Harding et al., 2021; The Southern Initiative, 2018), the definition and implementation has been inconsistent and variable in quality (Mark & Hagen, 2020). King's (2021) thesis, 'Oranga Mokopuna. Ethical co-designing for the pluriverse', explores the varying definitions and use of co-design within academic literature. King (2021) explains that the definitions and descriptions within the broader literature, "…include overlapping use of related terms and/or use of synonyms" (pp. 109). A systematic review conducted by King et al. (2022) on 'Co-design for indigenous and other children and young people from priority social groups' revealed, out of the 15 studies included in the analysis, only three provided a definition of co-design. Findings from Barrett and Masters-Awatere (2021); Harding et al. (2021); King (2021); King et al. (2022); and Mark and Hagen (2020), concur that there is no clarity around what 'counts' as co-design, and as such there is no agreed upon definition within the discipline.

Though there is no one agreed upon definition there are core elements that have been identified within studies that have provided a definition of how they use co-design. King (2021) describes the element of participation below.

> Current articulations of the term 'co-design' tend to reflect a spectrum of participation (of people with lived experience of the issue at hand) across a process of design. This spectrum ranges from that of participation within a particular phase of a design process, to participation across an entire design process, to that of on-going participation across future iterations of design.

(p. 122).

Given participation is a principle of Te Tiriti o Waitangi, this is a significant element for co-design involving Māori.

Another principle of Te Tiriti o Waitangi is partnership, which also has links to participation. Te Tiriti o Waitangi defines the principle of partnership as, "the obligation on both parties to act reasonably, honourably and in good faith" (States Services Commission, 2005, p. 14). Despite this clear definition of partnership, Matheson et al. (2005) argues that across scholarship and disciplines, the definition, and use of, partnership is inconsistent. Matheson et al (2005) goes further by suggesting that, studies providing a definition, focus on community critique as opposed to the role of the government partner. Partnership and participation are noted as being intertwined and as Matheson et al (2005) explains, "participation is most often described as levels of community involvement, from information sharing and consultation, to shared decision making and responsibility" (p. 8). Lynch (2002) argues that partnership is seen as a higher end of a continuum of participation. Rarere et al (2019) further explains that partnerships should actively adopt critical reflection processes to help "build strong trust and synergy, power sharing and effective sustainable implementation practices" (p. 478). These elements have been evidenced in previous chapters within this thesis and will be discussed further in the subsequent section. Findings from the literature above indicate that the key characteristics that contribute to co-design are: active partnership; participation; community involvement; and shared decision making and responsibility.

Again, though there is no universal definition of co-design, some scholars have developed their own definitions or framework that implement the elements noted above. King (2021) puts forth a new definition termed 'ethical co-designing' that is informed by 'Oranga Mokopuna' and based upon the voices of mokopuna (grandchildren) and ngā kaipūkenga (participants as knowledge holders and experts in their respective areas). King (2021) described ethical co-designing with mokopuna and whānau as;

> an ongoing reflexive, respectful and reciprocal process of designing that, underpinned by tāngata whenua rights, requires equitable power-sharing throughout in the determining of, and collective creativity in addressing those issues of importance to them. Ethical

> co-designing necessitates accountability to mokopuna and whānau and supports meaningful transformative outcomes.
>
> (p. 483).

King (2021) further offers a framework 'Te Wānanga' that supports "…ethical co-designing with mokopuna and whānau that is grounded in Māori ways of knowing and being, tikanga and mātauranga Māori, and in tāngata whenua rights to health and well-being" (pp. iv).

The He Pikinga Waiora Implementation framework (HPW) used in chapter 5 of this thesis, is a guide to support the successful development and implementation of health interventions (Oetzel et al., 2017). At its core, the HPW framework has Indigenous self-determination, ensuring that implementation of interventions are grounded in practices of Indigenous decision making. The HPW framework consists of four elements: Cultural Centeredness- Ko tōku reo, tōku ohooho, Ko tōku reo, tōku Māpihi Maurea; Community Engagement- He urunga tangata he urunga pāhekeheke, he urunga oneone mau tonu; Systems Thinking- He tina ki runga, he tāmore ki raro; and Integrated Knowledge Translation- Toi te kupu, toi te mana, toi (Oetzel et al., 2017).

Cultural centeredness considers how communities have culture, including shared understandings, ways of doing, being, understanding and interacting with one another; being mindful of the everyday realities of the community. Community engagement centres on the partnering of researchers and the community throughout the project. Integrated knowledge translation considers the integration of knowledge translation activities within the context of the community. Systems thinking explores the layers within society, individuals, communities, and national levels. Within the four principles are eight criteria, community voice, reflexivity, structural transformation and resources, community engagement, integrated knowledge translation, systems perspectives, systems relationships, and system levels (Oetzel, et al, 2017). All elements of the HPW framework have "conceptual fit with Kaupapa Māori aspirations including indigenous knowledge creation, theorizing, and methodology" (Oetzel et al., 2017, p. 1).

Developed in 2016, the HPW has been applied to a number of health interventions within Aotearoa. Oetzel et al's (2020) study concluded that the "HPW framework is useful for guiding the co-design work, particularly as a self-monitoring tool to conduct process evaluation" (pp. 9).

The two studies highlighted above (King, 2021; Oetzel et al., 2020) provide insight into potential definitions of co-design. However, as identified earlier, a universal definition is missing from academic literature. This lack of clarity on a definition of co-design can have negative implications for Indigenous Peoples. As King (2021) highlights, "…what is clearly missing from any definitions and/or expositions of co-design within the broader literature… is the explicit mention of either rights or equity" (pp. 122).

7.3.2 Implications of co-design on Indigenous Peoples and Māori

Research has found that co-design has the potential of transformational, positive change, but also has possible adverse consequences if the necessary commitment needed is not followed through and delivered on (Boyd et al., 2012; Mark & Hagen, 2020). Co-design studies can be especially harmful to Indigenous communities, as King (2021) explains,

> research findings identified the emergence of co-design as a market/commodity, and the parallel presence of harmful colonial, racist, paternalistic, deficit, othering, voyeuristic and extractive discourses within the field of co-design. A lack of engagement with ethics was also evident.

(p. iii-iv).

King et al's (2022) systematic review found that "a dearth of information limits the extent to which the literature can be definitive as to whether codesign works for Indigenous and other children and young people from priority social groups, or whether codesign reduces health inequities" (p. 1). Harding and Oetzel (2019) offer further rationale for the lack of progress made in reducing Indigenous health inequities due to the lack of Indigenous theoretical health implementation frameworks. Still, findings from other studies have noted that little attention, if any, has been afforded to how co-design processes and practices consider, address, or impact on the wellbeing of people involved (Blomkamp, 2018; Rolleston et al., 2020). Discussed here are challenges to the use of co-design that have been raised in academic scholarship, health practice, and within this thesis.

The intention of co-design is that it be an approach that encompasses views of multiple stakeholders, predominately community or end-users. The emphasis on 'co-design' is that stakeholders work in partnership, sharing power and decision making (Oetzel et al., 2018). However, recent literature, specific to health research in Aotearoa, has found that the term 'partnership' has been saturated in many studies, with the word partnership applied either too liberally or yielding no meaning for community or end-users (Mark & Hagen, 2020). Thus, "there is an apparent disconnect between the rhetoric of co-design and its purported benefits, and how co-design appears to be currently practiced" (King, 2021, p. iv).

"Doing co-design involves creating time, space and structures for learning, reciprocity, and power sharing" (Mark & Hagen, 2020, p. 5). Within health services there are issues of power and resource imbalances that affect authentic partnership. As evidenced in the Waitangi Tribunal (2019) report,

> equal partnership or even partnership is another one of those terms that we use a lot but I've found in practice [it's] very, very difficult. I look at my mana whenua group and I feel real aroha for them when they're working in partnership with our DHBs and that's not because there aren't good people sitting around the table wanting to work in partnership but you know our mana whenua is in monetary terms a $50,000 organisation if they're lucky versus… a $1.4 billion organisation so it's really, really challenging to be in partnership with that. That doesn't mean people aren't genuinely trying to do that but equal partnership is interesting rhetoric that is hard to put into practice

(pp. 88).

Within chapter 5 of this thesis, I acknowledged and reflected on my own position of power as the researcher. Even though I believed the Whirihia team and I shared leadership of the development and implementation of the Whirihia tool, I still held a position of power as the researcher.

This reflexive practice is a key principle of the HPW, as well as a core characteristic of Kaupapa Māori research. The need for cultural and ethical considerations in co-design has been highlighted as a key imperative (King, 2021; King et al., 2022; Mark & Hagen, 2020). King et al's (2021) call for an urgent requirement on "…evaluation research that focuses on co-design impacts and assesses the contribution of co-design to achieving equity. We also recommend culturally safe ethical processes be implemented whenever undertaking co-design" (pp. 1).

The perceived threat of co-designed projects is that they are selected to overshadow the core characteristic of Kaupapa Māori, essentially sacrificing Māori aspirations. This is not to say that co-design does not have a place in Aotearoa. Māori academics make up less than 4% of Professors and 5% of academics (McAllister et al., 2022). Within the health workforce Māori account for 8.5% (13,589) of the total health workforce with the majority of Māori, (71% or 9,696) being in the unregulated health workforce (professions that are not regulated under the Health Practitioners Competence Assurance Act) (Sewell, 2017). This means that the Māori health research and senior health workforce is substantially less than non-Māori, and are not representative of the Māori population. Consequently, it is inevitable that non-Māori will undertake research that impacts Māori. Therefore, appropriate frameworks are needed.

Given that non-Māori will undertake research on or with Māori, co-design is a potential alternative process. However, given past indiscretions, Māori concerns are warranted about the potential for co-design to be used and measured as successful, without authentic engagement and equal power sharing. Therefore, it is imperative that crown agencies are held to account.

> If we are to address health inequities, it is imperative that policy affirms diverse Māori realities and embraces Māori expertise and vision… Policy transformation is needed to better engage with, and more effectively respond to, the health needs of Māori.
>
> (Came et al, 2021, p. 345).

7.3.3 How does co-design fit conceptually, and practically, within Kaupapa Māori

As identified earlier, poorly designed and executed, co-design has potential risks for Māori communities. However, there are some Māori scholars who are utilising co-design and aspects of Kaupapa Māori research, to develop and implement responsive health interventions.

Masters-Awatere et al. (2021) used the HPW to co-design and implement a whānau-centred, community-based lifestyle programme (Kimi Ora) for Māori whānau and communities with diabetes or pre-diabetes. The HPW grounded in Indigenous self-determination and Kaupapa Māori research principles contributed to the successful uptake of the Kimi Ora intervention. Outcomes of the study concluded that the actively tailored Kimi Ora intervention "…resulted in successful biomedical outcomes, high engagement and high retention" (Masters-Awatere et al, p. 68). This study demonstrated that a well co-designed intervention, which was heavily reliant on tailoring for, and with, Māori communities, was vital.

A second study by Te Morenga et al. (2018) demonstrated an example of how both co-design and Kaupapa Māori research approaches were used to design a mobile-phone delivered (mHealth) healthy lifestyle app. Te Morenga et al's (20218) study further evidenced how a co-design research approach is compatible with Kaupapa Māori methodologies.

> The combination of Kaupapa Māori and co-design research processes has led to the creation of a culturally tailored mHealth tool to support Māori hauora aspirations. The holistic vision of health centering around the well-being of whānau and the importance of maintaining or strengthening tribal connections to people and place described by our communities is wholly consistent with previously described models of Māori health … Kaupapa Māori methods enabled a creative process resulting in a prototype that would not have been readily envisaged by academic researchers used to looking to international research on behaviour change techniques to develop health interventions.

(Te Morenga et al, 2018, p. 97).

Within this thesis, co-design was used to enhance, and give further voice to Kaupapa Māori research principles. The use of HPW as a framework to guide health intervention design and implementation aligns with Kaupapa Māori aspirations of health and wellbeing. Working with Māori communities to identify their needs and supporting them develop a solution that is appropriate and responsive is the essence of Kaupapa Māori. Authentic co-design is also inherently mana-enhancing (Te Morenga et al, 2018). As the needs and aspirations of end-users are at the heart of co-design, and solutions are derived based on a strengths-based approach, co-design is mana-enhancing. To my knowledge, HPW is the only Māori health implementation framework despite the prevalence of Māori models of health and frameworks (Durie, 1996, 1998; Durie, 1999).

The concerns of co-design are warranted, given the misinterpretations of partnership (Matheson et al, 2005), disingenuous collaboration with communities (King et al., 2022), and the power and resource imbalances with those in positions of authority or privilege (Waitangi Tribunal, 2017). Co-design without an Indigenous framework or ethical guideline can create greater inequities. The study examples provided above and findings in chapter 5 however, highlight the strengths and possibilities effective and appropriate co-design interventions can have on Māori communities.

7.4 Position as a Māori wahine researcher

I started this research with the broad hope of contributing to improved maternal and infant health outcomes. My struggle was how to confine this goal to a PhD. Within Māori maternities it was difficult to identify antenatal education, which was the focus of this thesis, as a standalone milestone without the wider context of maternity and parenting. Navigating academia through a Te Ao worldview added to the challenges.

Moewaka Barnes et al. (2013) explains, there are "complexities that exist within Te Ao Māori and the layers linked within and across each other" (p. 21). This is evidenced through the nurturing and protection of māmā hapū. What the māmā experiences, physically, emotionally, and spiritually, will pass through to pēpi. The health and wellbeing of māmā hapū ensures the best start to life, the foundation for the first 1000 days (Edmonds et al., 2022). The circular dimension of Te Ao Māori, connecting the whenua (placenta) back to the whenua (land) after birth and then returning to the land after death, provides another essential layer involving intergenerational and ecological relationships and influences.

I liken this circular and interwoven concept to my thesis, where I experienced emotions of laughter, frustration, and anger. Laughter because often I felt like I was going in circles with what I was trying to articulate, and I am sure most PhD candidates can sympathise. Frustration with having to identify taken for granted assumptions of Western academic processes and ideologies that, instead of supporting students, create greater barriers. And immense anger that the struggles Māori māmā hapū and their whānau endure are still prevalent, and that we as Māori are fighting the same issues raised in literature and through political movements more than 20 years on.

In this thesis I brought together different ideologies to address the research aim, which was to understand how a researcher can contribute to positive maternal health outcomes. I have woven together the following: academia and health practice; aspects of Western and Māori theoretical bases; and Indigenous and non-Indigenous research methods. As an Indigenous scholar I take lead from the likes of Professor Linda Tuhiwai Smith who acknowledges that we as Indigenous freely share our knowledge and history with other Indigenous Peoples.

In keeping with the theme of 'weaving' I will expand on my reasons for incorporating the different methods used throughout the thesis, providing insight into how my personal experiences have shaped this thesis. Specifically, within this section I wish to acknowledge the realities of our māmā hapū and share my experiences that align to some of the themes highlighted throughout this thesis. Because first and foremost, I am a Māori māmā.

I have experienced racism. As a māmā hapū at the start of hapū journey, my engagement with health services was unpleasant. My first interaction with a midwife felt like an interrogation. I was repeatedly asked whether I smoke or had been drinking whilst pregnant. Despite answering "no" multiple times, I was continuously asked the same questions. Even my tane (husband) walked away deflated.

I share this experience because this is one motivation for undertaking this research. I was 26 years old when I was first hapū. I had graduated University with a degree and was halfway through my postgraduate studies. At that time, I was an educated woman, had a stable income, and was a relatively confident wahine. Yet, when I engaged with this horrible midwife, I felt small. I was so relieved when I found the courage to stand up to this woman. But it took a beautiful Kaupapa Māori antenatal programme for me to do that. This experience had me questioning so many things, mainly, if I could not stand up for myself how many other wahine are in this position? Wahine that have no whānau support, rangatahi (teenagers), wahine experiencing several health and social issues, that struggle to pay bills, or simply wahine who do not feel confident to speak their mind to people in positions of power. Luckily, I attended a Kaupapa Māori antenatal class and was empowered to stand up to this midwife. I then found another midwife who shared similar values as me.

One reason for undertaking a retrospective audit of Hapū Wānanga, in chapter 4, was because I was genuinely interested to understand how other māmā hapū, and their whānau, experienced the programme. I wanted to give voice to these women and was excited to learn whether the programme had similar value to them, as it did for me. The findings were overwhelmingly positive. Participants regarded the information that was shared as life changing. Participants also described the constituents that separated this programme from other health service experiences.

I was careful and reflexive in my consideration of the methodologies for this thesis. As a research team, and I include my supervisors and mentors in my team for I would not have been able to design and undertake this research without them, we were able to discuss the various forms and ways this thesis could be shaped. We are a team made up of Māori and non-Māori researchers, who came to this research from different disciplinary backgrounds and experiences of living in Aotearoa. My team enabled the creation of a safe space, where I was able to demonstrate leadership, expertise, and experience, as a researcher, health professional, and Māori wahine.

I undertook chapter 4 from a Kaupapa Māori research positioning including an analysis of the literature that centered on Māori cultural understandings and practices (Bishop, 1996), and ensured that the issues and needs of Māori were the focus and outcomes of the research (Smith, 1999). Aligning to Kaupapa Māori principles is critical theory and critical race theory that was discussed in chapter 2 of this thesis. Both Kaupapa Māori and critical race theory challenge "…prevailing ideologies of superiority, power relations and social practices that disadvantage Maori" (Walker et al., 2006, p. 334). Though it was not clearly acknowledged in chapter 4, elements of critical theory and critical race theory were present. For instance, the taken for granted assumptions of Western information transmission, i.e. the teacher says, student listens approach, was discounted. Instead, aspects of the Hapū Wānanga that were important to Māori participants were privileged. Elements of what creates a safe space, from a tinana (physical), hinengaro (mental), and wairua (spiritual) perspective, were foregrounded in this chapter.

This thesis evolved due to the impacts of Covid-19 but also because of learnings across the PhD journey. For instance, the co-designed Whirihia holistic assessment tool (Whirihia tool) in chapter 5 was originally going to be a manuscript focused on the specific details of the Whirihia tool, rather than the co-design development stages of the tool. However, during my study I discovered a lack of practical resources and tools for emerging researchers, specifically Māori, on how to support health intervention design and implementation. As a result, I wanted to produce a publication that not only had a health outcome but also a practical tool for fellow Indigenous emerging researchers.

The emergence of chapter 5 as a practical tool to support fellow Indigenous emerging researchers came at a time when I was experiencing difficulties as a Māori PhD Candidate, and found comfort and strength from fellow Māori students. I experienced racism as a Māori PhD Candidate. I had non-Māori members of faculty ask me for clarity on certain Māori terms. I was asked to provide guidance on how to address the issue of Māori data sovereignty on an ethics application for a research project I was only a research assistant on. I was also asked questions around the correct use of tikanga me te reo Māori (Māori protocols and language) despite the fact I am still very much a novice in this area.

I take pride in the fact that I was asked these questions considering that apart from my Masters thesis, this was my first experience in academia. But upon reflection, I must question, was I only asked to be part of these projects because I am Māori and there was no one else to fit that box? I genuinely believe these members of faculty had no ill intentions, but it does make me question my worth as a researcher.

These sentiments are shared in a recent study by McAllister et al. (2022) that explored the experiences of Māori and Pacific postgraduate students in STEM (Science, Technology, Engineering and Mathematics). Collaborators noted issues such as being 'put on the spot' and expected to know, and explain, elements of mātauranga Māori and te reo Māori. One comment especially resonated with me and had me questioning the legitimacy of my worth and adding unnecessary pressure.

> It is constantly being pointed out to me that I am the only Māori and Pasifika PhD student in my department. It is a lot of pressure to succeed and do well to be a good role model.
>
> (McAllister et al, 2021, p. 7).

I saw value in using reflective practice in chapter 5. Though reflective practice inherently means a sense of vulnerability, I believe that by sharing successes, and learnings, I can enable other Māori emerging researchers to undertake, and continue, this journey.

Chapter 6 was another research activity where I experienced mix emotions of happiness and anger. I thoroughly enjoyed meeting māmā hapū in the Whirihia antenatal wānanga and then reengaging with them once their pēpi was born. Though the impacts of Covid-19 resulted in a change of research method, from kanohi ki te kanohi (face to face) interviews to phone interviews, the 'catch ups' were extremely uplifting for me during a period of global unrest. However, when wahine shared their birthing stories and engagement with health services I felt a sense of anger for the lack of health engagement and treatment afforded to most of these wahine.

The grounding of this chapter using a mana wahine approach, amplified the stories and experiences shared by these wahine. Though these stories highlight similar themes and characteristics of how Māori postnatal māmā experience health services, the stories are uniquely theirs.

Most notably, this thesis is an example of decolonisation. Māori academics have described the importance of decolonisation and Kaupapa Māori informed or aligned practice for Indigenous research Curtis (2016). De Leeuw & Greenwood (2017) describe decolonisation as "…work toward disassembling (especially White) settler supremacy by de-centering and dismantling colonial institutions, modalities, systems, structures, and ways of knowing and being that continue to dispossess Indigenous Peoples of their lands, families, homes, languages, and rights" (p. 145). Through my journey of being hapū working within health services, and now as a PhD Candidate, I have undergone a process of decolonisation, both professionally and personally.

This thesis is an extension of me. It is an entanglement of my past and present experiences. I started with what seemed like a simple mantra, 'every wāhine should have access to a Kaupapa Māori antenatal wānanga'. The formation of Te Aka Whai Ora Māori Health Authority is a testament to the work of those before me. The potential of Te Aka Whai Ora Māori Health Authority to improve Māori maternal and infant health outcomes is promising. The evidence-based research in this thesis provides practical solutions that can be implemented in health system and service delivery immediately. This thesis also provides practical solutions for emerging Indigenous health researchers.

7.5 Limitations of study

Identified throughout chapter 3 to 6 are study limitations of each. I expand on some of these limitations in order of priority.

The first limitation of this thesis was the inability to measure the extent of effectiveness of the Whirihia tool. In 2020, Covid-19 impacted all aspects of health and is "…predicted to be long-lasting with intergenerational impacts for both Indigenous and non-Indigenous peoples" (Carr, 2020, p. 491). The original intent of chapter 6 was to determine the extent to which the Whirihia tool improved access to health services, using the built-in referral pathway. The hope was to interview māmā when their pēpi was between 3 and 6 months of age to understand whether access was improved and their experience with services. Once findings were gathered, we would present these back to health services for them to identify enablers and barriers to delivering responsive services for whānau. Due to the volatile climate and extra pressure on services we opted to focus on the experiences of these māmā and their experiences with health services in general, post Covid-19 March 2020 lockdown. Though the experiences captured in chapter 6 contribute to the growing scholarship on Māori experiences with health services, I was unable to assess the effectiveness of the Whirihia tool, and therefore its creditability as an effective co-designed health intervention. Still, chapter 5 addresses a significant gap on how Māori-led co-design processes can be undertaken.

The second limitation of this study is the use of systematic reviews to highlight Indigenous, specifically Māori, knowledge. Systematic reviews rely on evidence published in academic literature. As highlighted in chapter 3, there are several barriers Indigenous Peoples face regarding the production of academic scholarship on community health initiatives. These barriers include publishing not being a priority, a lack of time, effort, and money required to publish in prestigious journals, and the primary focus of health services on delivery rather than dissemination of findings. Further, Rolleston et al. (2020) exclaim that, "…'standard' literature reviews in fact perpetuate inequities" (p. 134). The systematic review undertaken in chapter 3 revealed that academic scholarship is not an accurate indicator of Indigenous knowledge. The remaining chapters of this thesis indicate a wider range of publication sources exist, from locations beyond academia. A brief search using Google and Facebook for instance, revealed the existence of Kaupapa Māori antenatal wānanga. There are clearly several interventions here that can potentially contribute to our understanding of what works in the antenatal space to support Māori māmā hapū and their whānau.

A third limitation of this thesis are the Kaupapa Māori programmes, Hapū Wānanga and Whirihia, both being positioned within Western health organisations: Waikato DHB and Plunket Whānau Awhina Whānau Ora, respectively. As discussed in chapter 4, though Hapū Wānanga was designed, developed, and implemented by Māori, it is a government funded programme positioned in the Western constraints of the Waikato DHB. This can challenge the 'by Māori' criteria of Kaupapa Māori programmes. Still, Hapū Wānanga has attributes that align to Durie's (2001) characteristics of a 'by Māori, for Māori' approach, and above all seeks to advance Māori and make positive transformational change using Māori knowledge, values, and processes. As such, Hapū Wānanga is a Kaupapa Māori initiative.

A final limitation of this thesis is the contrast between the rhetoric of co-design and the academic ethics process. The essence of co-design is the shared development of the project. Funding and ethics committees require detailed information about projects prior to engaging with stakeholders. This is fundamentally at odds with co-design processes. It is also a key concern of Indigenous Peoples, as researchers have described in the past, relating to the imposed pre-conceived Western ideas onto Indigenous communities (Smith, 1999).

Within this research, I experienced this contrast with the University of Waikato Human Research Ethics Committee. Due to the nature of this thesis, I was required to go through two rounds of ethics committee consent. I obtained approval first for the retrospective audit data, and to begin co-designing the Whirihia tool. I then had to obtain approval to use the tool once it was developed. A comment from one of the committee members questioned the need to offer a particular service as an option. The purpose of the tool is to provide expectant mothers with choice and for them to decide to engage. To assume that whānau may not be able to afford to attend a service is an act of racism and is condescending. Importantly, to take away someone's choice on what service they can or cannot engage with is silencing their voice.

A second concern of putting the Whirihia tool through the University of Waikato Human Research Ethics Committee aligns to the struggle Indigenous Peoples face to prove their knowledge is valid. Requiring the ethics committee to approve a piece of work that was developed with, and for, the community reaffirms the superior ideology of academic institutions, whilst diminishing the legitimacy and validity of Māori community voice and expertise.

7.6 Impact of Research

As a result of the research within this thesis I have been able to make a positive impact toward advancing Māori maternal and infant health, and broader Māori health gain. Appendix 15 is a list of accomplishments associated with the research I have undertaken as part of my PhD journey, such as awards and publications.

7.6 Future Research

This thesis is only a small contribution to revitalising Indigenous birthing practices and knowledge. I hope that the work in this thesis leads to more in-depth consideration and engagement with Kaupapa Māori antenatal wānanga providers to understand the range of options that are available to māmā hapū and their whānau. Future research into Kaupapa Māori antenatal wānanga will also support the widening of what is considered to be "gold standard" evidence when it comes to policy and decision making in the maternity space. An environmental scan, scope, and showcase of Māori communities and providers and the work that they are doing in the traditional Māori birthing knowledge space, would contribute importantly to Indigenous understandings and outcomes. As well as demonstrate further to health systems, the inadequacies of the current Western focus.

I was pleasantly surprised to see the rapid and exponential growth of evidence-based research focused on Māori maternities and initiatives since beginning my PhD journey. I have noted most of these scholarly pieces throughout this thesis however I would like to provide a dedicated space to acknowledge these works and encourage others to read further.

7.7 Concluding thoughts

A recent call to action by several Indigenous and non-Indigenous academics and health professionals across Aotearoa, Australia, Canada, and the United States, was released, stating the urgency to improve Indigenous perinatal health and wellbeing (Hickey et al., 2021). This thesis supports that call, but also extends with potential responsive solutions to improve Māori, and in turn Indigenous, maternal health.

This thesis demonstrates that Kaupapa Māori initiatives have a positive and transformational impact on Māori, and non-Māori, māmā hapū and their whānau. I have reiterated the issues that Māori scholars such as Professor Linda Tuhiwai Smith, Professor Papaarangi Reid, Sir Mason Durie, and Professor Leonie Pihama, have raised for years. The findings show that Māori māmā hapū are still facing these challenges today. However, unlike the dominant Western narrative of Māori as deficit, this thesis affords our māmā hapū a voice. The expectation of this thesis was to connect readers not only with Māori knowledge, but also with wahine Māori experiences.

Using findings from the previous chapters that are foregrounded by the voice and experiences of Māori māmā hapū and their whānau, I have indicated three practical steps that can be enacted immediately at both a health system, and health service delivery level. First, determine the extent to which CBE classes are meeting Māori end-user needs. Second, using findings from end-user experiences as a foundation, reorient the Ministry of Health pregnancy and parenting services specifications to ensure appropriate content is prioritised in CBE classes, particular Māori knowledge. Third, adequately resource CBE providers who can deliver programmes that meet the needs of Māori end-users. With the new Te Whatu Ora Health New Zealand and Te Aka Whai Ora Māori Health Authority, now is the time to deliver on the various strategic documents to authentically meet the needs of māmā hapū and whānau.

The evidence-based research delivered in this thesis provided the basis for the three recommended changes noted above. These recommendations can be implemented into the health system to enable positive and meaningful change for Māori. I reiterate these steps as a reminder of what can be done to achieve health equity for Māori, and to work closer towards Te Tiriti o Waitangi obligations and responsiveness.

If these recommendations are not onboarded, I posit the question, what would be needed in order for the voices of wahine Māori to have some legitimacy, and shape policy and practice in the future?

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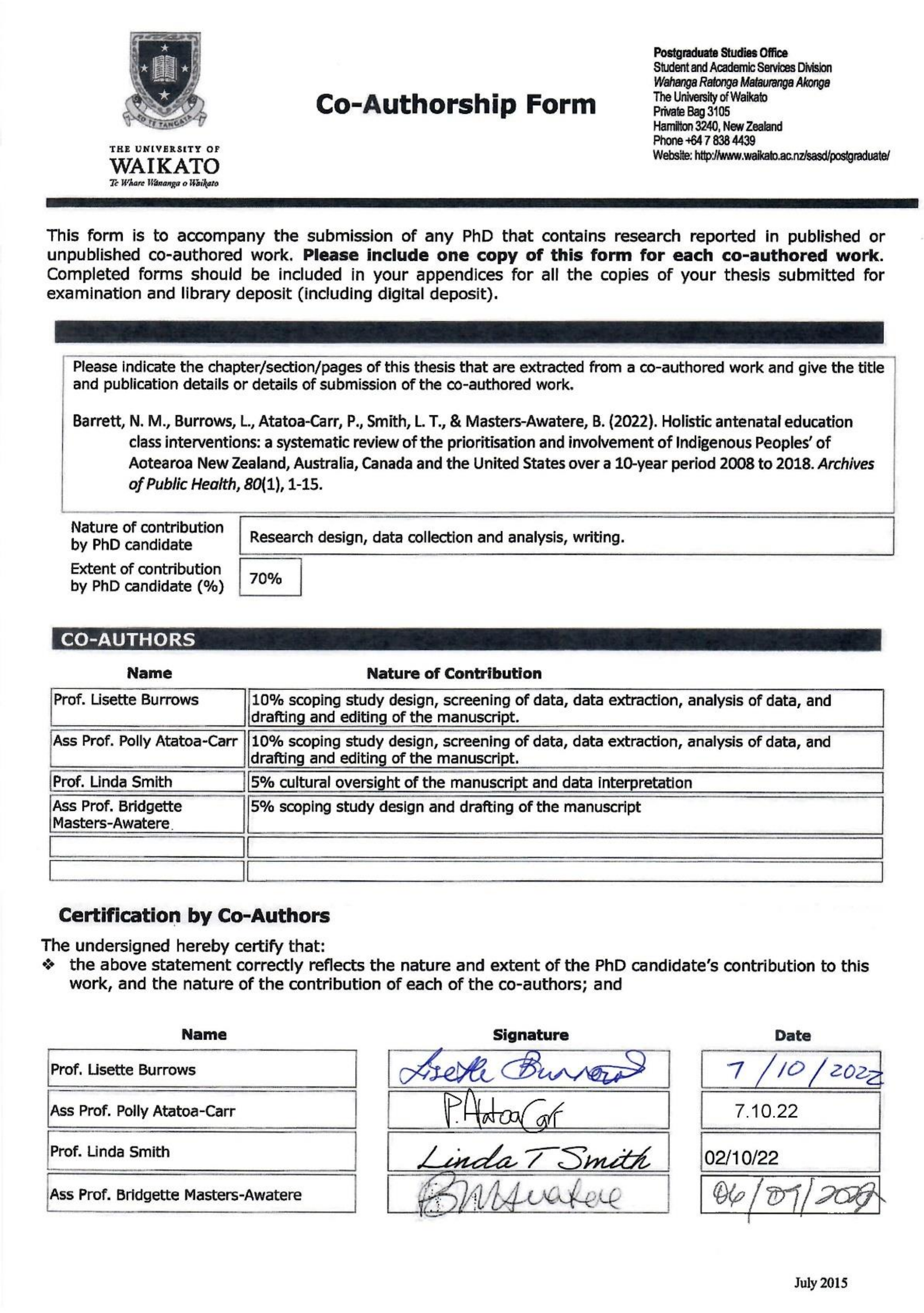
Appendix 1: Co-authorship form article 1 chapter 3



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Te Whare Wānanga o Waikato

Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Barrett, N. M., Burrows, L., Atatoa-Carr, P., Smith, L. T., & Masters-Awatere, B. (2022). Holistic antenatal education class interventions: a systematic review of the prioritisation and involvement of Indigenous Peoples' of Aotearoa New Zealand, Australia, Canada and the United States over a 10-year period 2008 to 2018. *Archives of Public Health*, *80*(1), 1-15.

Nature of contribution by PhD candidate	Research design, data collection and analysis, writing.
Extent of contribution by PhD candidate (%)	70%

CO-AUTHORS

Name	Nature of Contribution
Prof. Lisette Burrows	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Ass Prof. Polly Atatoa-Carr	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Prof. Linda Smith	5% cultural oversight of the manuscript and data interpretation
Ass Prof. Bridgette Masters-Awatere	5% scoping study design and drafting of the manuscript

Certification by Co-Authors

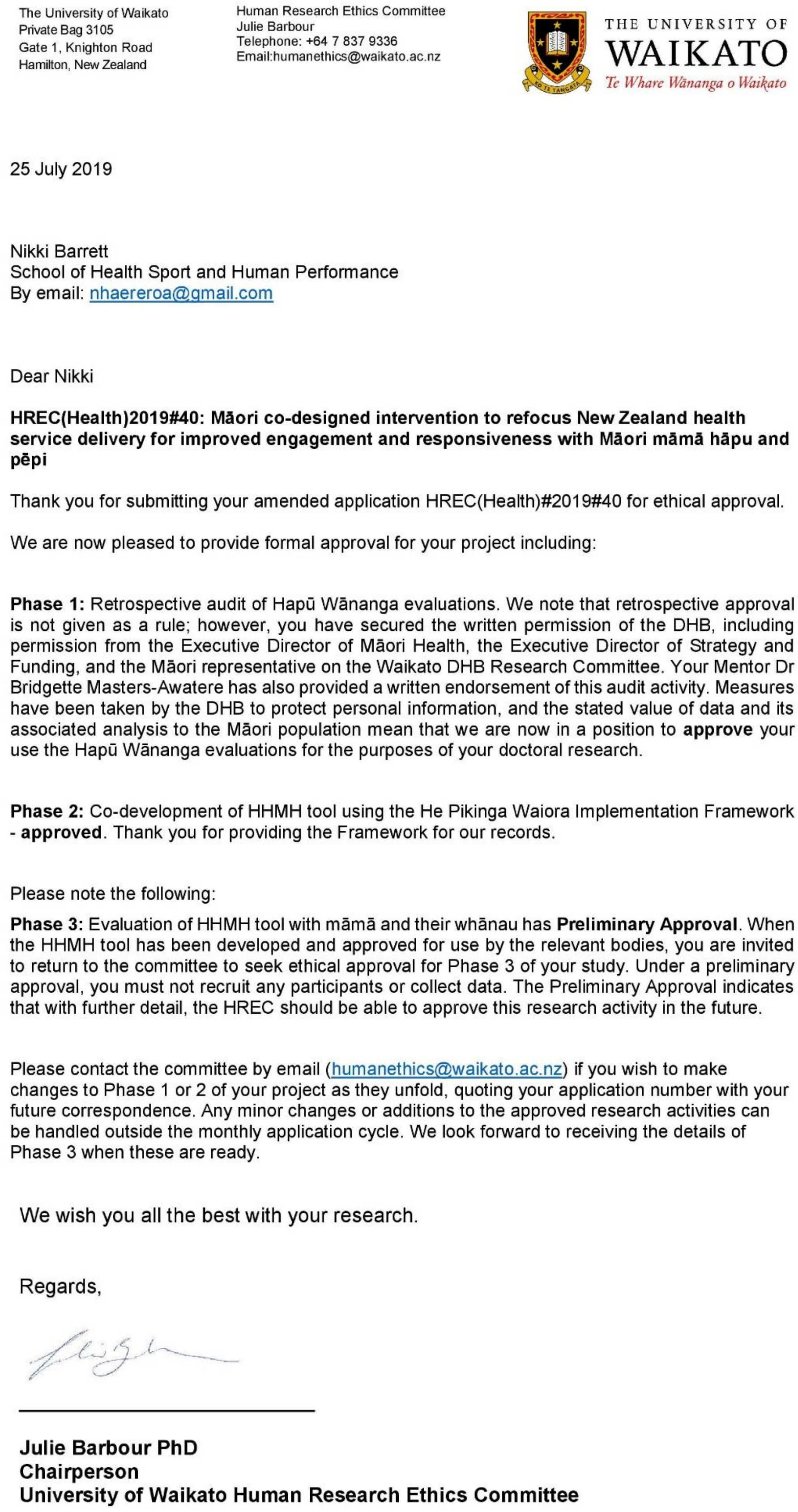
The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Prof. Lisette Burrows	Lisette Burrows	7/10/2022
Ass Prof. Polly Atatoa-Carr	P.AtatoaCarr	7.10.22
Prof. Linda Smith	Linda T Smith	02/10/22
Ass Prof. Bridgette Masters-Awatere	BMAwatere	06/07/2022

July 2015

Appendix 2: University of Waikato Human Research Ethics Committee approval phase 1 and 2



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Private Bag 3105
Gate 1, Knighton Road
Hamilton, New Zealand

Human Research Ethics Committee
Julie Barbour
Telephone: +64 7 837 9336
Email:humanethics@waikato.ac.nz

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

25 July 2019

Nikki Barrett
School of Health Sport and Human Performance
By email: nhaereroa@gmail.com

Dear Nikki

HREC(Health)2019#40: Māori co-designed intervention to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hāpu and pēpi

Thank you for submitting your amended application HREC(Health)#2019#40 for ethical approval.

We are now pleased to provide formal approval for your project including:

Phase 1: Retrospective audit of Hapū Wānanga evaluations. We note that retrospective approval is not given as a rule; however, you have secured the written permission of the DHB, including permission from the Executive Director of Māori Health, the Executive Director of Strategy and Funding, and the Māori representative on the Waikato DHB Research Committee. Your Mentor Dr Bridgette Masters-Awatere has also provided a written endorsement of this audit activity. Measures have been taken by the DHB to protect personal information, and the stated value of data and its associated analysis to the Māori population mean that we are now in a position to **approve** your use the Hapū Wānanga evaluations for the purposes of your doctoral research.

Phase 2: Co-development of HHMH tool using the He Pikinga Waiora Implementation Framework - **approved**. Thank you for providing the Framework for our records.

Please note the following:

Phase 3: Evaluation of HHMH tool with māmā and their whānau has **Preliminary Approval**. When the HHMH tool has been developed and approved for use by the relevant bodies, you are invited to return to the committee to seek ethical approval for Phase 3 of your study. Under a preliminary approval, you must not recruit any participants or collect data. The Preliminary Approval indicates that with further detail, the HREC should be able to approve this research activity in the future.

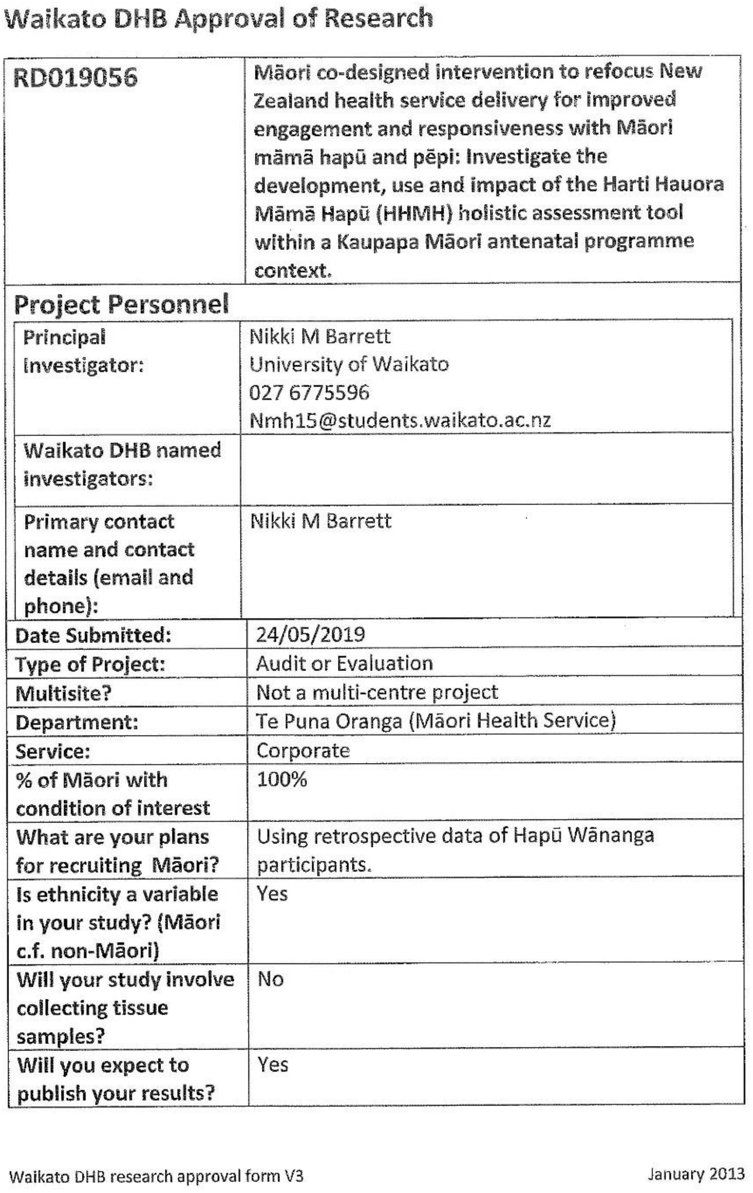
Please contact the committee by email (humanethics@waikato.ac.nz) if you wish to make changes to Phase 1 or 2 of your project as they unfold, quoting your application number with your future correspondence. Any minor changes or additions to the approved research activities can be handled outside the monthly application cycle. We look forward to receiving the details of Phase 3 when these are ready.

We wish you all the best with your research.

Regards,

Julie Barbour PhD
Chairperson
University of Waikato Human Research Ethics Committee

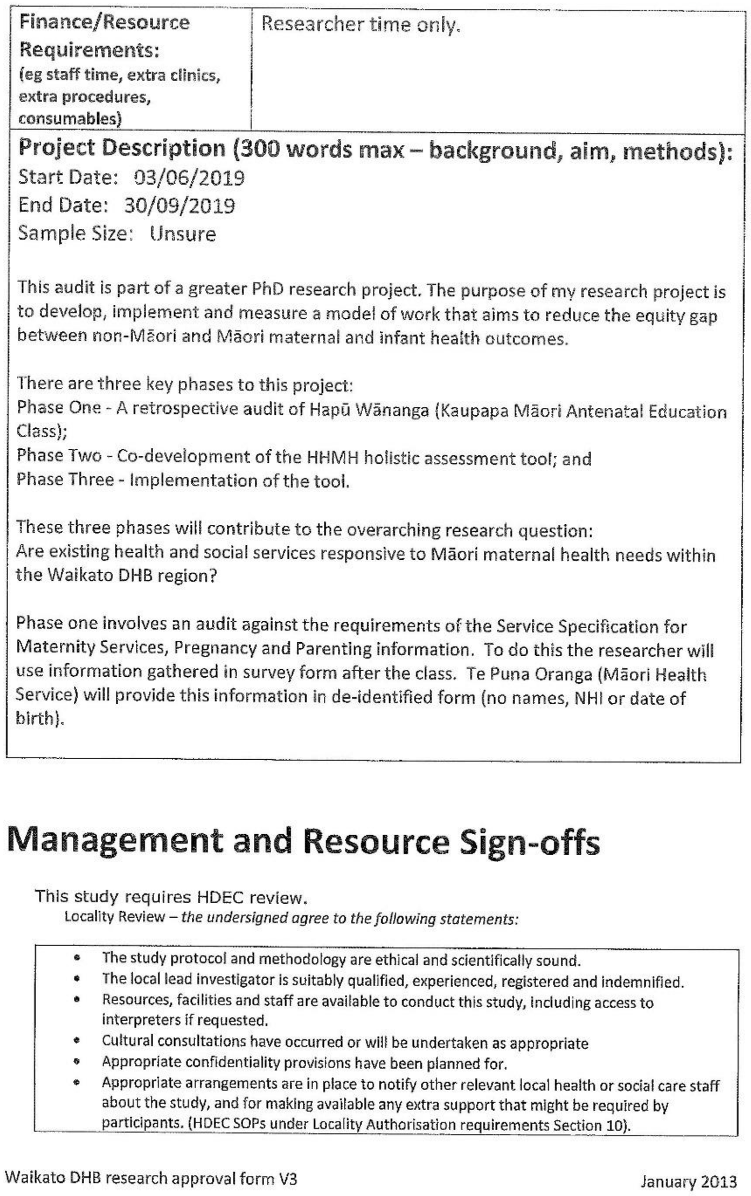
Appendix 3: Waikato District Health Board ethics approval



Waikato DHB Approval of Research

RD019056	Māori co-designed intervention to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi: Investigate the development, use and impact of the Harti Hauora Māmā Hapū (HHMH) holistic assessment tool within a Kaupapa Māori antenatal programme context.
Project Personnel	
Principal Investigator:	Nikki M Barrett University of Waikato 027 6775596 Nmh15@students.waikato.ac.nz
Waikato DHB named investigators:	
Primary contact name and contact details (email and phone):	Nikki M Barrett
Date Submitted:	24/05/2019
Type of Project:	Audit or Evaluation
Multisite?	Not a multi-centre project
Department:	Te Puna Oranga (Māori Health Service)
Service:	Corporate
% of Māori with condition of interest	100%
What are your plans for recruiting Māori?	Using retrospective data of Hapū Wānanga participants.
Is ethnicity a variable in your study? (Māori c.f. non-Māori)	Yes
Will your study involve collecting tissue samples?	No
Will you expect to publish your results?	Yes

Waikato DHB research approval form V3 January 2013



Finance/Resource Requirements: (eg staff time, extra clinics, extra procedures, consumables)	Researcher time only.

Project Description (300 words max – background, aim, methods):

Start Date: 03/06/2019
End Date: 30/09/2019
Sample Size: Unsure

This audit is part of a greater PhD research project. The purpose of my research project is to develop, implement and measure a model of work that aims to reduce the equity gap between non-Māori and Māori maternal and infant health outcomes.

There are three key phases to this project:
Phase One - A retrospective audit of Hapū Wānanga (Kaupapa Māori Antenatal Education Class);
Phase Two - Co-development of the HHMH holistic assessment tool; and
Phase Three - Implementation of the tool.

These three phases will contribute to the overarching research question:
Are existing health and social services responsive to Māori maternal health needs within the Waikato DHB region?

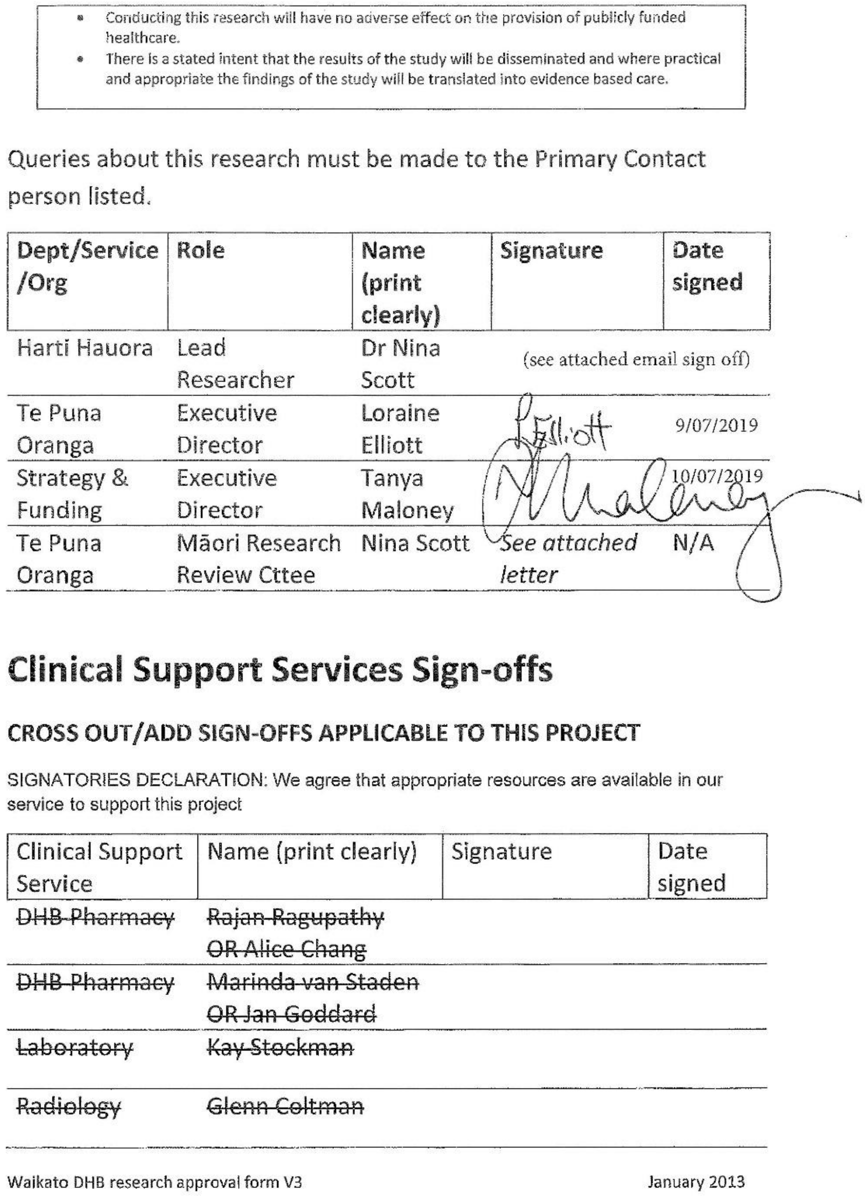
Phase one involves an audit against the requirements of the Service Specification for Maternity Services, Pregnancy and Parenting information. To do this the researcher will use information gathered in survey form after the class. Te Puna Oranga (Māori Health Service) will provide this information in de-identified form (no names, NHI or date of birth).

Management and Resource Sign-offs

This study requires HDEC review.

Locality Review – *the undersigned agree to the following statements:*

- The study protocol and methodology are ethical and scientifically sound.
- The local lead investigator is suitably qualified, experienced, registered and indemnified.
- Resources, facilities and staff are available to conduct this study, including access to interpreters if requested.
- Cultural consultations have occurred or will be undertaken as appropriate
- Appropriate confidentiality provisions have been planned for.
- Appropriate arrangements are in place to notify other relevant local health or social care staff about the study, and for making available any extra support that might be required by participants. (HDEC SOPs under Locality Authorisation requirements Section 10).



- Conducting this research will have no adverse effect on the provision of publicly funded healthcare.
- There is a stated intent that the results of the study will be disseminated and where practical and appropriate the findings of the study will be translated into evidence based care.

Queries about this research must be made to the Primary Contact person listed.

Dept/Service /Org	**Role**	**Name (print clearly)**	**Signature**	**Date signed**
Harti Hauora	Lead Researcher	Dr Nina Scott	(see attached email sign off)	
Te Puna Oranga	Executive Director	Loraine Elliott	LElliott	9/07/2019
Strategy & Funding	Executive Director	Tanya Maloney	Maloney	10/07/2019
Te Puna Oranga	Māori Research Review Cttee	Nina Scott	*See attached letter*	N/A

Clinical Support Services Sign-offs

CROSS OUT/ADD SIGN-OFFS APPLICABLE TO THIS PROJECT

SIGNATORIES DECLARATION: We agree that appropriate resources are available in our service to support this project

Clinical Support Service	Name (print clearly)	Signature	Date signed
~~DHB Pharmacy~~	~~Rajan Ragupathy~~ ~~OR Alice Chang~~		
~~DHB Pharmacy~~	~~Marinda van Staden~~ ~~OR Jan Goddard~~		
~~Laboratory~~	~~Kay Stockman~~		
~~Radiology~~	~~Glenn Coltman~~		

Waikato DHB research approval form V3 January 2013

~~Medical Records~~	~~Marilyn Hunt~~

Please return to the Research Office (via Sarah Brodnax, 13 Ohaupo Road) along with required documents as identified in the checklist for final approval.

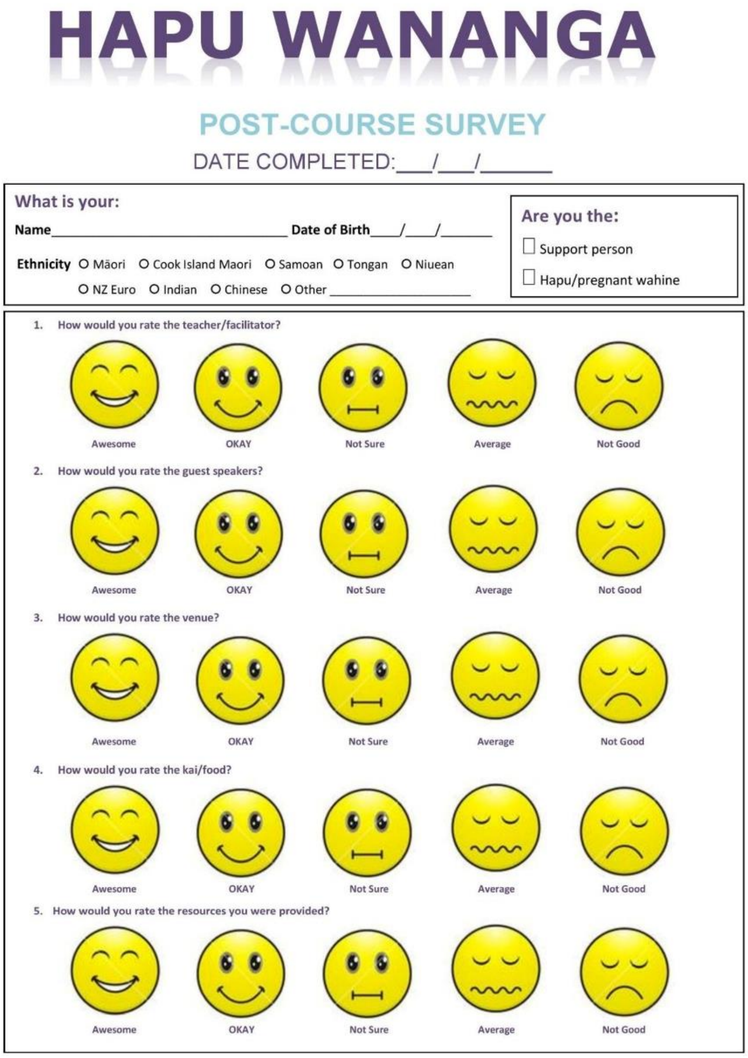
Office use only:
Quality & Patient Safety, Waikato DHB

Signature: **Date:** 17/7/19

Mo Neville
Director
Quality & Patient Safet

Name: **Position:**

Appendix 4: Hapū Wānanga post course survey



HAPU WANANGA

POST-COURSE SURVEY

DATE COMPLETED:___/___/______

What is your:

Name______________________________ **Date of Birth**____/____/_______

Ethnicity ○ Māori ○ Cook Island Maori ○ Samoan ○ Tongan ○ Niuean
○ NZ Euro ○ Indian ○ Chinese ○ Other ____________________

Are you the:

☐ Support person

☐ Hapu/pregnant wahine

1. How would you rate the teacher/facilitator?

Awesome OKAY Not Sure Average Not Good

2. How would you rate the guest speakers?

Awesome OKAY Not Sure Average Not Good

3. How would you rate the venue?

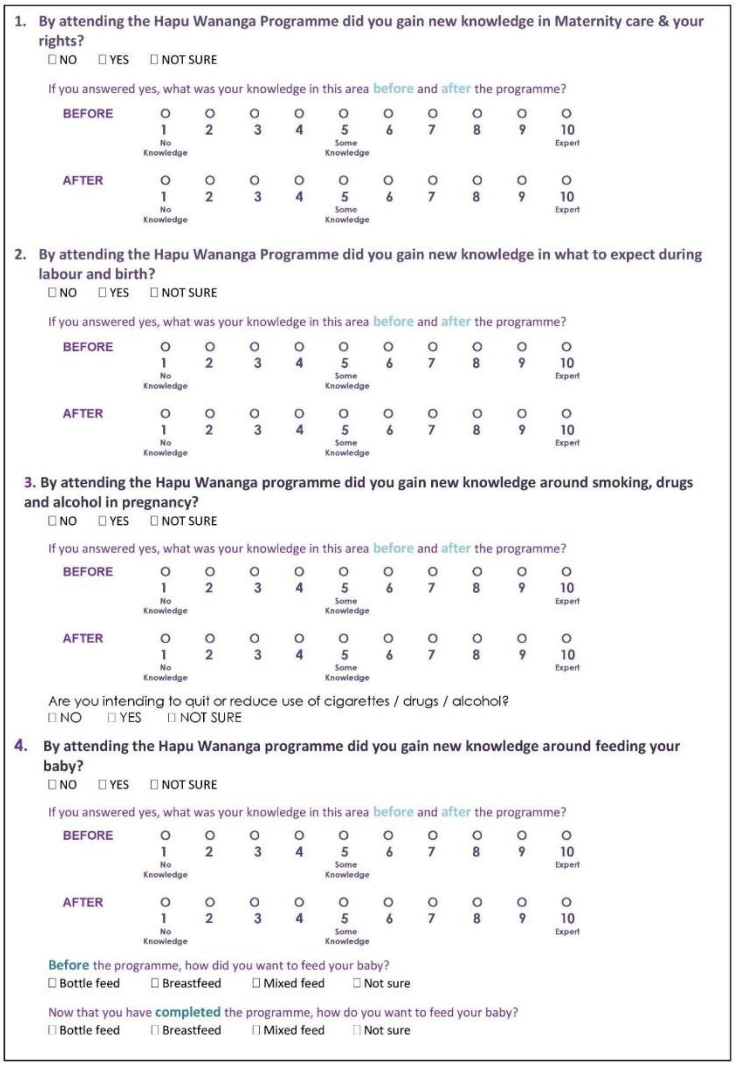
Awesome OKAY Not Sure Average Not Good

4. How would you rate the kai/food?

Awesome OKAY Not Sure Average Not Good

5. How would you rate the resources you were provided?

Awesome OKAY Not Sure Average Not Good



1. **By attending the Hapu Wananga Programme did you gain new knowledge in Maternity care & your rights?**

☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

2. **By attending the Hapu Wananga Programme did you gain new knowledge in what to expect during labour and birth?**

☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

3. **By attending the Hapu Wananga programme did you gain new knowledge around smoking, drugs and alcohol in pregnancy?**

☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

Are you intending to quit or reduce use of cigarettes / drugs / alcohol?

☐ NO ☐ YES ☐ NOT SURE

4. **By attending the Hapu Wananga programme did you gain new knowledge around feeding your baby?**

☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

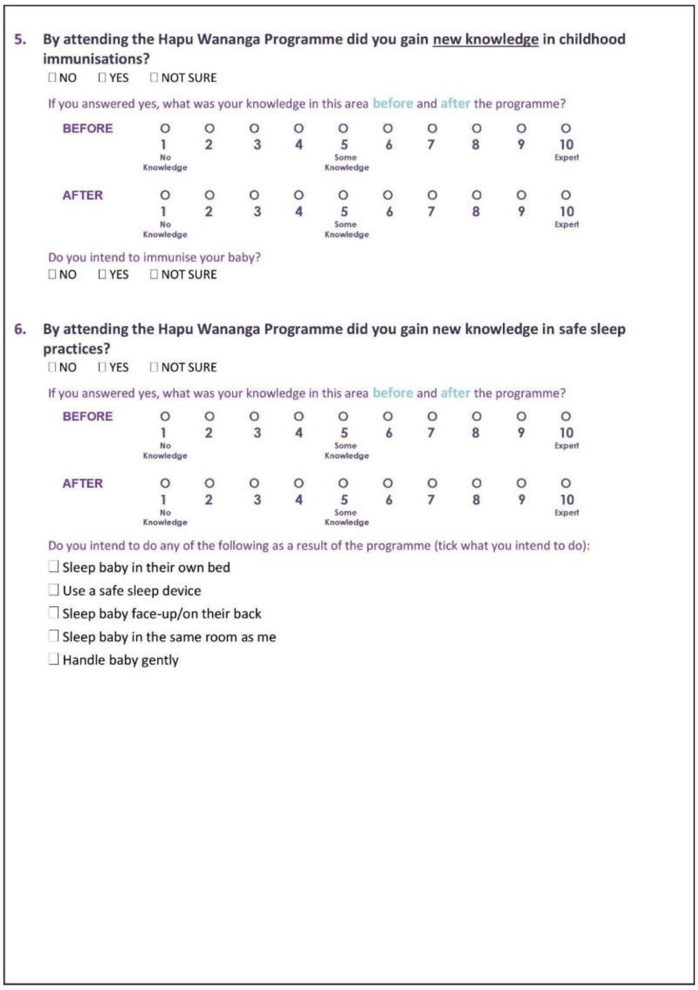
BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

Before the programme, how did you want to feed your baby?

☐ Bottle feed ☐ Breastfeed ☐ Mixed feed ☐ Not sure

Now that you have **completed** the programme, how do you want to feed your baby?

☐ Bottle feed ☐ Breastfeed ☐ Mixed feed ☐ Not sure



5. By attending the Hapu Wananga Programme did you gain new knowledge in childhood immunisations?

☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

Do you intend to immunise your baby?

☐ NO ☐ YES ☐ NOT SURE

6. By attending the Hapu Wananga Programme did you gain new knowledge in safe sleep practices?

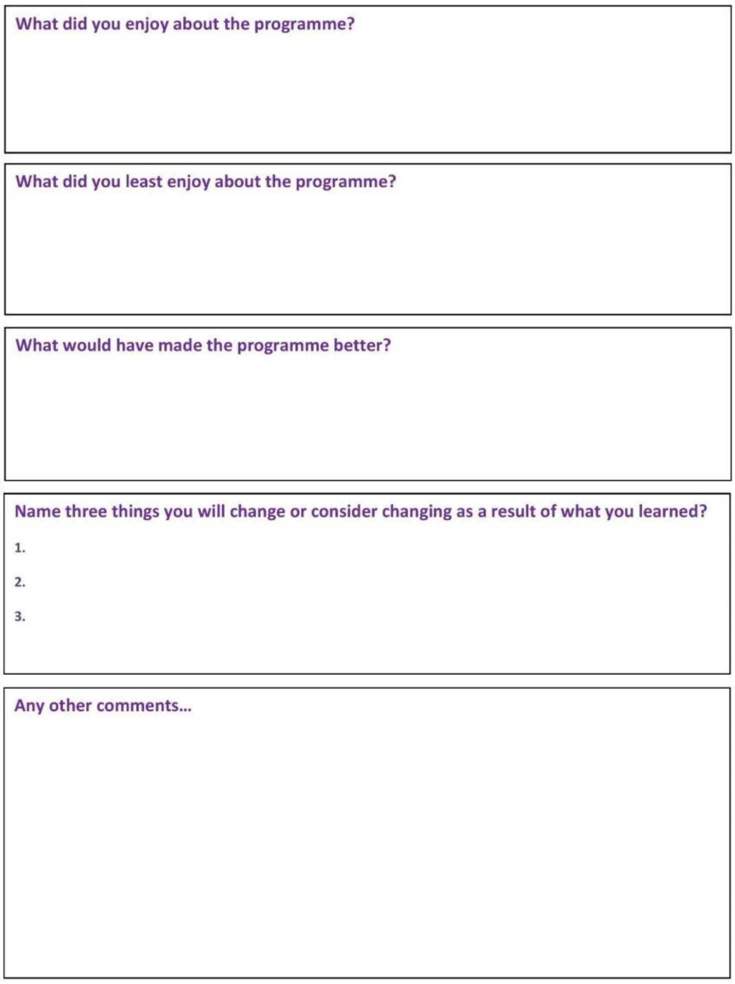
☐ NO ☐ YES ☐ NOT SURE

If you answered yes, what was your knowledge in this area before and after the programme?

BEFORE	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert
AFTER	○ 1 No Knowledge	○ 2	○ 3	○ 4	○ 5 Some Knowledge	○ 6	○ 7	○ 8	○ 9	○ 10 Expert

Do you intend to do any of the following as a result of the programme (tick what you intend to do):

☐ Sleep baby in their own bed
☐ Use a safe sleep device
☐ Sleep baby face-up/on their back
☐ Sleep baby in the same room as me
☐ Handle baby gently



What did you enjoy about the programme?

What did you least enjoy about the programme?

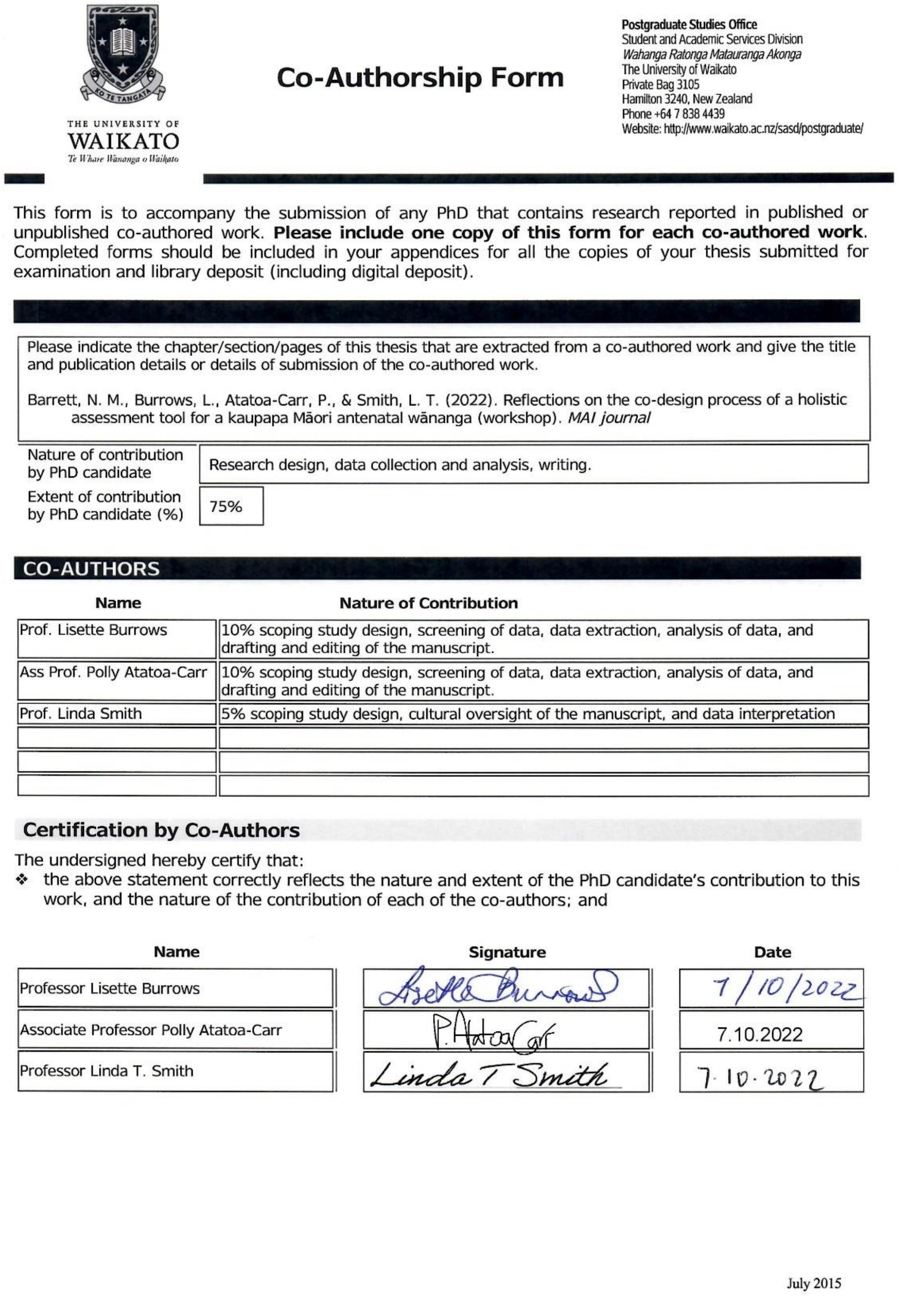
What would have made the programme better?

Name three things you will change or consider changing as a result of what you learned?

1.
2.
3.

Any other comments…

Appendix 5: Co-authorship form article 2 chapter 4



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Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
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The University of Waikato
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Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Barrett, N. M., Burrows, L., Atatoa-Carr, P., & Smith, L. T. (2022). Reflections on the co-design process of a holistic assessment tool for a kaupapa Māori antenatal wānanga (workshop). *MAI journal*

Nature of contribution by PhD candidate	Research design, data collection and analysis, writing.
Extent of contribution by PhD candidate (%)	75%

CO-AUTHORS

Name	Nature of Contribution
Prof. Lisette Burrows	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Ass Prof. Polly Atatoa-Carr	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Prof. Linda Smith	5% scoping study design, cultural oversight of the manuscript, and data interpretation

Certification by Co-Authors

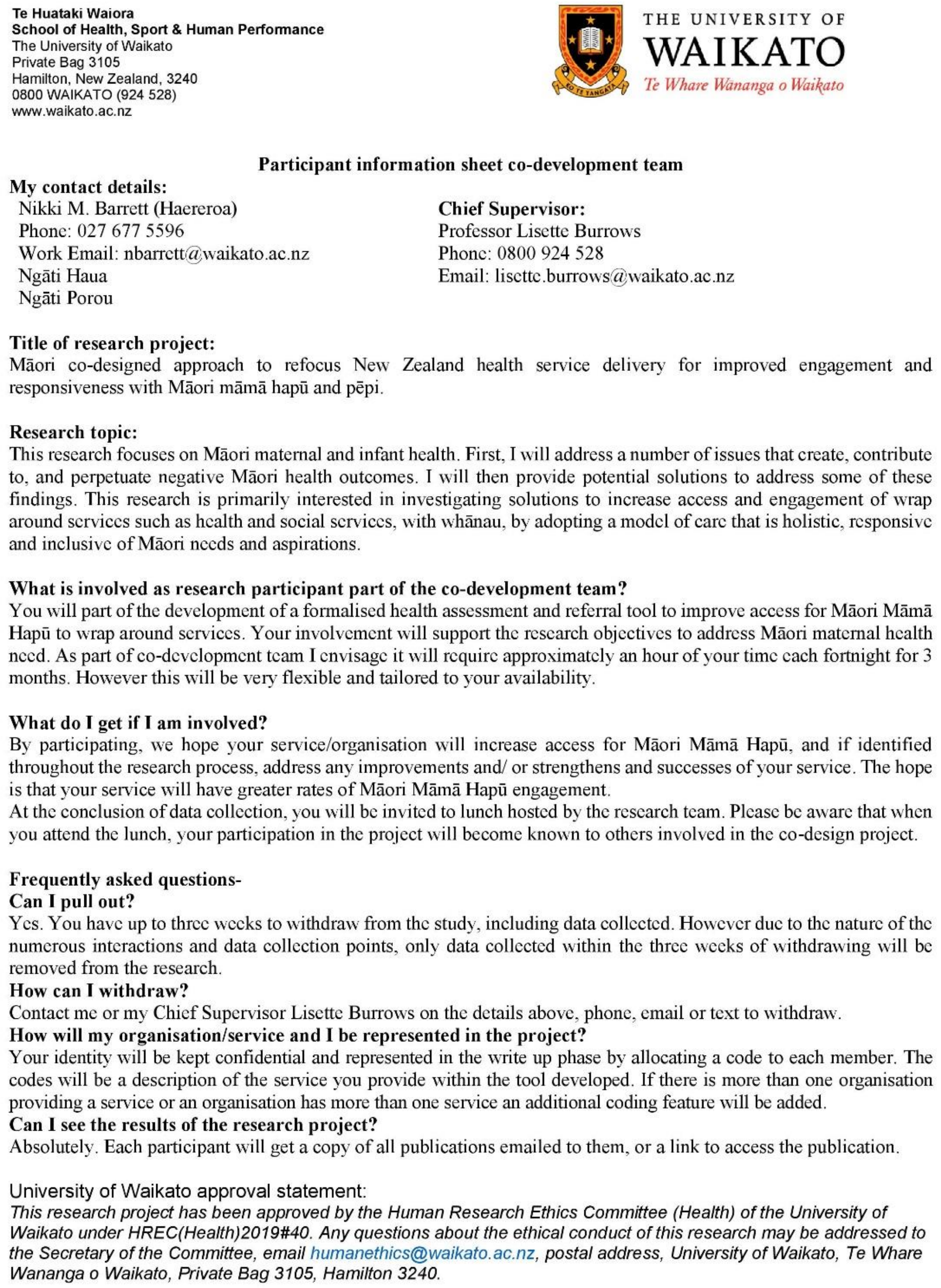
The undersigned hereby certify that:

❖ the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Professor Lisette Burrows	Lisette Burrows	7/10/2022
Associate Professor Polly Atatoa-Carr	P.AtatoaCarr	7.10.2022
Professor Linda T. Smith	Linda T Smith	7.10.2022

July 2015

Appendix 6: Participant information sheet co-design Whirihia tool



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WAIKATO
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Participant information sheet co-development team

My contact details:
Nikki M. Barrett (Haereroa)
Phone: 027 677 5596
Work Email: nbarrett@waikato.ac.nz
Ngāti Haua
Ngāti Porou

Chief Supervisor:
Professor Lisette Burrows
Phone: 0800 924 528
Email: lisette.burrows@waikato.ac.nz

Title of research project:
Māori co-designed approach to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi.

Research topic:
This research focuses on Māori maternal and infant health. First, I will address a number of issues that create, contribute to, and perpetuate negative Māori health outcomes. I will then provide potential solutions to address some of these findings. This research is primarily interested in investigating solutions to increase access and engagement of wrap around services such as health and social services, with whānau, by adopting a model of care that is holistic, responsive and inclusive of Māori needs and aspirations.

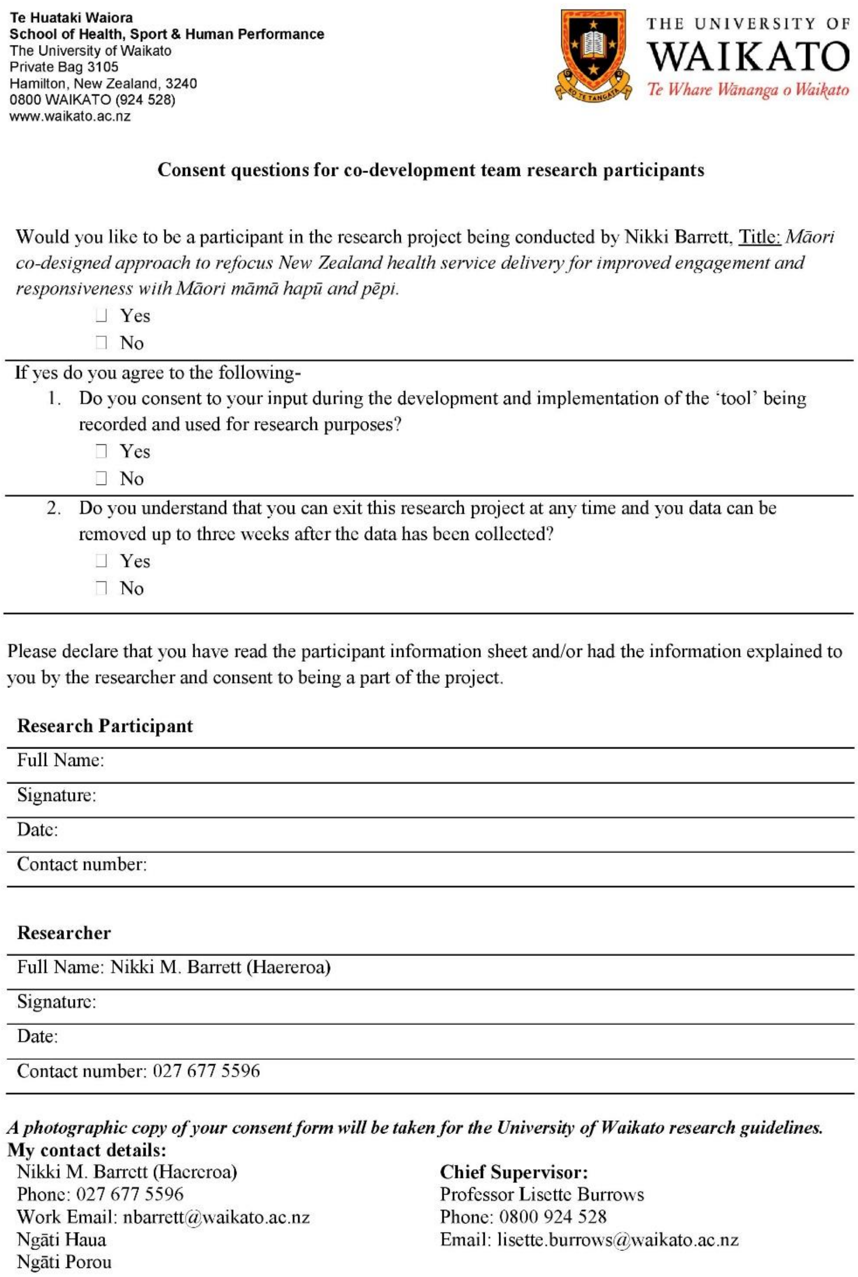
What is involved as research participant part of the co-development team?
You will part of the development of a formalised health assessment and referral tool to improve access for Māori Māmā Hapū to wrap around services. Your involvement will support the research objectives to address Māori maternal health need. As part of co-development team I envisage it will require approximately an hour of your time each fortnight for 3 months. However this will be very flexible and tailored to your availability.

What do I get if I am involved?
By participating, we hope your service/organisation will increase access for Māori Māmā Hapū, and if identified throughout the research process, address any improvements and/ or strengthens and successes of your service. The hope is that your service will have greater rates of Māori Māmā Hapū engagement.
At the conclusion of data collection, you will be invited to lunch hosted by the research team. Please be aware that when you attend the lunch, your participation in the project will become known to others involved in the co-design project.

Frequently asked questions-
Can I pull out?
Yes. You have up to three weeks to withdraw from the study, including data collected. However due to the nature of the numerous interactions and data collection points, only data collected within the three weeks of withdrawing will be removed from the research.
How can I withdraw?
Contact me or my Chief Supervisor Lisette Burrows on the details above, phone, email or text to withdraw.
How will my organisation/service and I be represented in the project?
Your identity will be kept confidential and represented in the write up phase by allocating a code to each member. The codes will be a description of the service you provide within the tool developed. If there is more than one organisation providing a service or an organisation has more than one service an additional coding feature will be added.
Can I see the results of the research project?
Absolutely. Each participant will get a copy of all publications emailed to them, or a link to access the publication.

University of Waikato approval statement:
This research project has been approved by the Human Research Ethics Committee (Health) of the University of Waikato under HREC(Health)2019#40. Any questions about the ethical conduct of this research may be addressed to the Secretary of the Committee, email humanethics@waikato.ac.nz, postal address, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

Appendix 7: Consent form for co-design participants



Te Huataki Waiora
School of Health, Sport & Human Performance
The University of Waikato
Private Bag 3105
Hamilton, New Zealand, 3240
0800 WAIKATO (924 528)
www.waikato.ac.nz

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Te Whare Wānanga o Waikato

Consent questions for co-development team research participants

Would you like to be a participant in the research project being conducted by Nikki Barrett, Title: *Māori co-designed approach to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi.*

☐ Yes
☐ No

If yes do you agree to the following-

1. Do you consent to your input during the development and implementation of the 'tool' being recorded and used for research purposes?
   ☐ Yes
   ☐ No
2. Do you understand that you can exit this research project at any time and you data can be removed up to three weeks after the data has been collected?
   ☐ Yes
   ☐ No

Please declare that you have read the participant information sheet and/or had the information explained to you by the researcher and consent to being a part of the project.

Research Participant

Full Name:
Signature:
Date:
Contact number:

Researcher

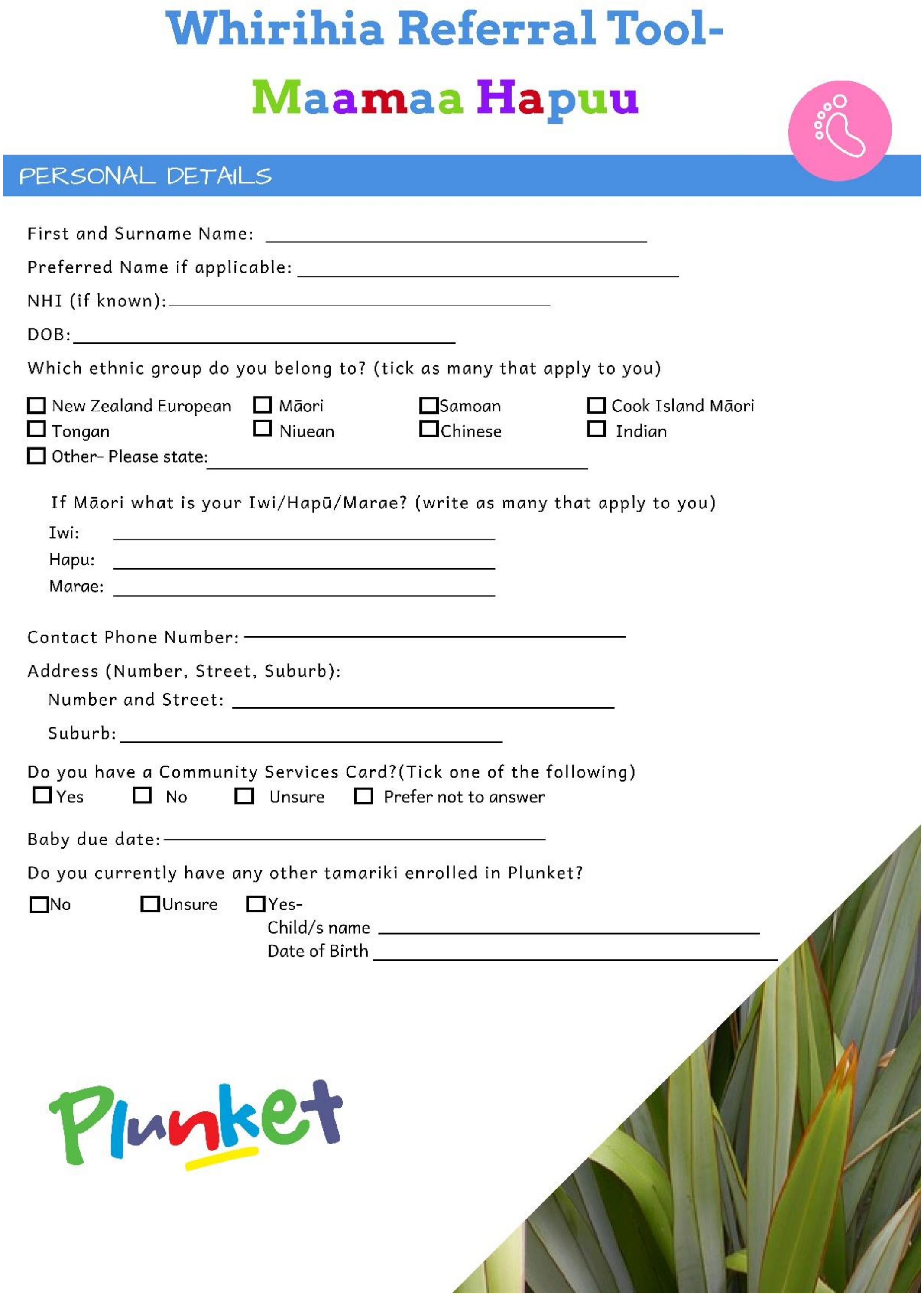
Full Name: Nikki M. Barrett (Haereroa)
Signature:
Date:
Contact number: 027 677 5596

A photographic copy of your consent form will be taken for the University of Waikato research guidelines.

My contact details:
Nikki M. Barrett (Haereroa)
Phone: 027 677 5596
Work Email: nbarrett@waikato.ac.nz
Ngāti Haua
Ngāti Porou

Chief Supervisor:
Professor Lisette Burrows
Phone: 0800 924 528
Email: lisette.burrows@waikato.ac.nz

Appendix 8: Whirihia holistic assessment tool



Whirihia Referral Tool-
Maamaa Hapuu

PERSONAL DETAILS

First and Surname Name: ______________________________

Preferred Name if applicable: ______________________________

NHI (if known): ______________________________

DOB: ______________________________

Which ethnic group do you belong to? (tick as many that apply to you)

☐ New Zealand European ☐ Māori ☐ Samoan ☐ Cook Island Māori
☐ Tongan ☐ Niuean ☐ Chinese ☐ Indian
☐ Other- Please state: ______________________________

If Māori what is your Iwi/Hapū/Marae? (write as many that apply to you)

Iwi: ______________________________
Hapu: ______________________________
Marae: ______________________________

Contact Phone Number: ______________________________

Address (Number, Street, Suburb):
Number and Street: ______________________________
Suburb: ______________________________

Do you have a Community Services Card?(Tick one of the following)
☐ Yes ☐ No ☐ Unsure ☐ Prefer not to answer

Baby due date: ______________________________

Do you currently have any other tamariki enrolled in Plunket?

☐ No ☐ Unsure ☐ Yes-
Child/s name ______________________________
Date of Birth ______________________________

Plunket

RESEARCH CONSENT

This section is about giving consent to be part of the research. As explained by Nikki you do not have to be part of the research to get a referral into the following services.

Would you like to be a participant in the research project being conducted by Nikki Barrett?

(Title of research project: Māori co-designed approach to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi)

☐ Yes ☐ No ☐ Unsure- contact me later

If yes do you agree to the following-

1. Do you consent to your responses in this tool, being used and analysed for the purposes of this research project? (Only your responses will be recorded in the research not your name).

   ☐ Yes ☐ No

2. Do you understand that you can leave this research project at any time but there are cut-off dates, as explained by Nikki, to request data collection withdrawal?

   ☐ Yes ☐ No

3. Do you consent to being invited to participate in two possible interviews with Nikki Barrett once your pēpi is born?

   ☐ Yes ☐ No

Please declare that you have read the participant information sheet and/or had the information explained to you by the researcher and consent to being a part of the project. Also, that you understand you have the ability to leave the research project at any time. Regarding withdrawal of the data you have provided, you have up to four weeks after data collection has taken place to withdraw the data you provided.

Participant signature: ______________________________

Date: ______________________________

Researcher name: Nikki M. Barrett

Researcher signature: ______________________________

Date: ______________________________

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CURRENT HEALTH STATUS AND REFERRAL

If you tick 'yes' you would like a referral into any of the following services we will send your above personal details.

1. Do you have an LMC?	☐ Yes ☐ Prefer not to answer		Go to question 2
	☐ Yes but thinking of changing ☐ No ☐ Unsure	1.b Would you like to be referred to an LMC? ☐ Yes ☐ No	
2. Are you currently enrolled in a GP service?	☐ Yes ☐ Prefer not to answer		Go to question 3
	☐ Yes but thinking of changing ☐ No ☐ Unsure	2.b Would you like to be referred to a GP clinic in your area? ☐ Yes ☐ No	
3. Are you currently enrolled with a dentist?	☐ Yes ☐ Prefer not to answer		Go to question 4
	☐ Yes but thinking of changing ☐ No ☐ Unsure	3b. Would you like to be referred to the oral health service? ☐ Yes ☐ No	
4. Do you or someone you live with smoke?	☐ Yes ☐ Prefer not to answer		Go to question 5
	☐ No ☐ Unsure	4b. Would you like to be referred to the smoking cessation service? ☐ Yes ☐ No	
5. Have you had a 'smear' test in the last 3 years?	☐ Yes ☐ Prefer not to answer		Go to next section
	☐ No ☐ Unsure	5b. Would you like to be referred to the cervical screening service? ☐ Yes ☐ No	

TICK THE FOLLOWING BOXES IF YOU WOULD YOU LIKE A REFERRAL INTO ANY OF THE FOLLOWING SERVICES?

Whare Ora Programme
☐Yes

Infant CPR Programme
☐Yes

Home Birth service
☐Yes

Whānau Awhina Whānau Ora (Plunket) Programme
☐Yes

Tamariki Ora Programme
☐Yes

Wahakura Wānanga
☐Yes

Maternal Acupuncture Service
(There is a cost associated with this service)
☐Yes

Phillips Family Chiropractor
(There is a cost associated with this service)
☐Yes

Mirimiri service
(There is a cost associated with this service)
☐Yes

Family Start or
Kirikiriroa Family Service Programme
☐Yes

Tikanga Ririki Programme
☐Yes

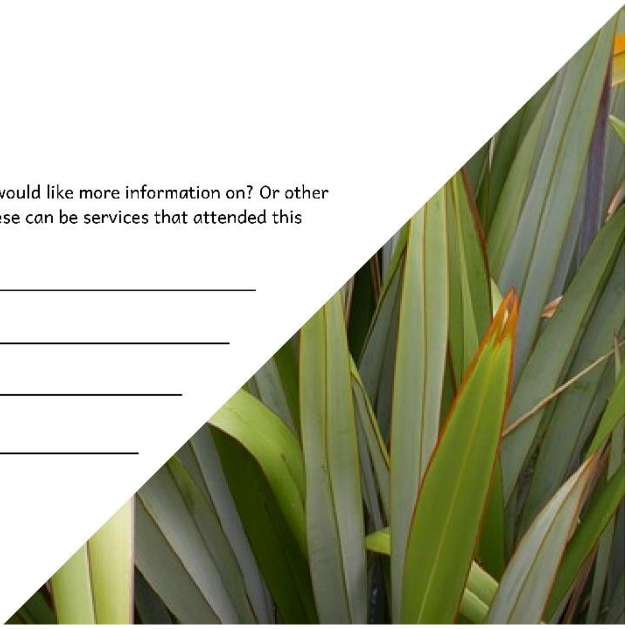
Are there any other services/organisations you would like more information on? Or other services you think would be valuable to you? (these can be services that attended this wananga or not).

____

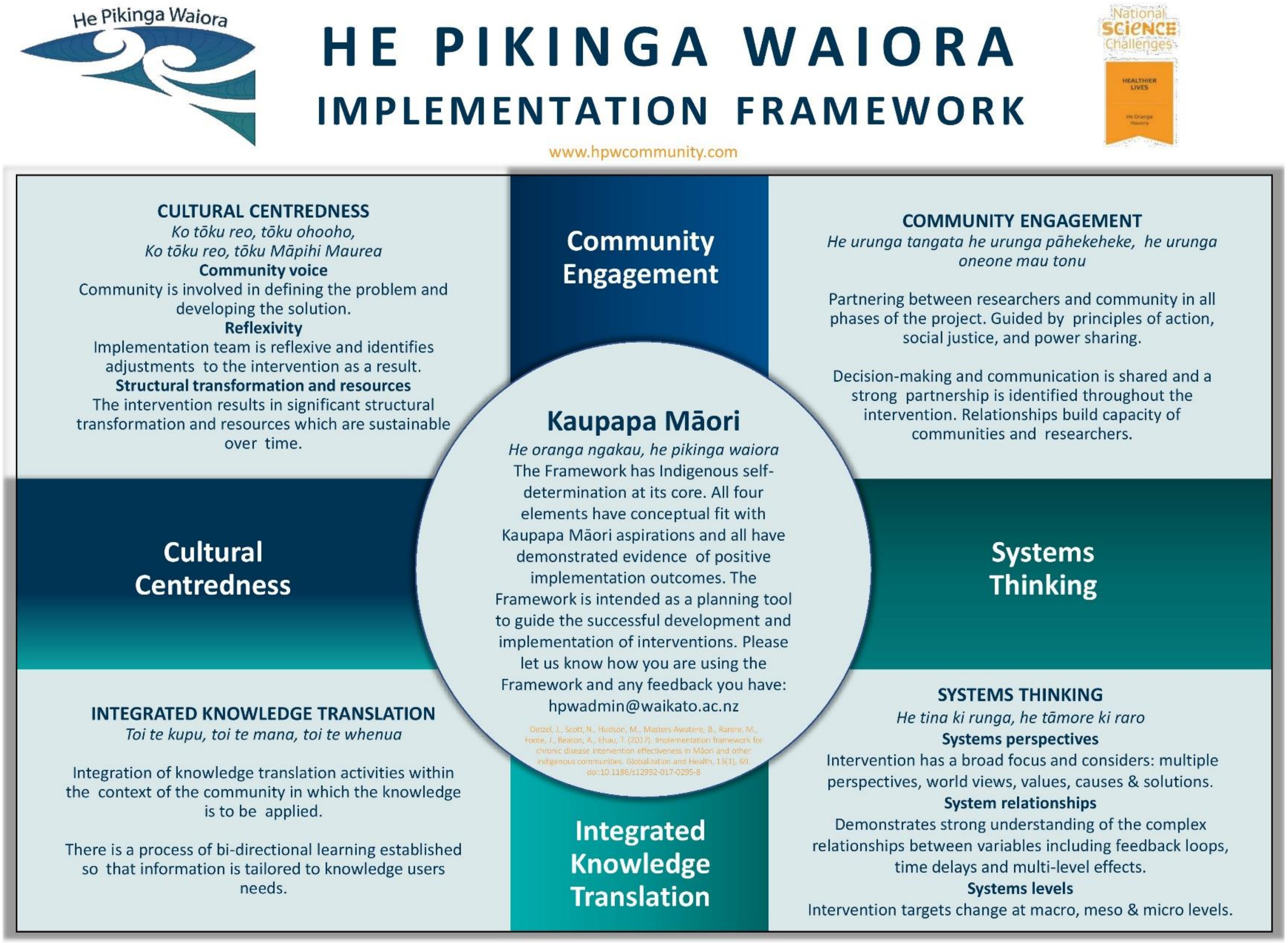
____

____

____



Appendix 9: He Pikinga Waiora Implementation framework (HPW)



HE PIKINGA WAIORA
IMPLEMENTATION FRAMEWORK

www.hpwcommunity.com

CULTURAL CENTREDNESS
Ko tōku reo, tōku ohooho,
Ko tōku reo, tōku Māpihi Maurea
Community voice
Community is involved in defining the problem and developing the solution.
Reflexivity
Implementation team is reflexive and identifies adjustments to the intervention as a result.
Structural transformation and resources
The intervention results in significant structural transformation and resources which are sustainable over time.

Community Engagement

COMMUNITY ENGAGEMENT
He urunga tangata he urunga pāhekeheke, he urunga oneone mau tonu

Partnering between researchers and community in all phases of the project. Guided by principles of action, social justice, and power sharing.

Decision-making and communication is shared and a strong partnership is identified throughout the intervention. Relationships build capacity of communities and researchers.

Cultural Centredness

Kaupapa Māori
He oranga ngakau, he pikinga waiora
The Framework has Indigenous self-determination at its core. All four elements have conceptual fit with Kaupapa Māori aspirations and all have demonstrated evidence of positive implementation outcomes. The Framework is intended as a planning tool to guide the successful development and implementation of interventions. Please let us know how you are using the Framework and any feedback you have:
hpwadmin@waikato.ac.nz

Oetzel, J., Scott, N., Hudson, M., Masters-Awatere, B., Rarere, M., Foote, J., Beaton, A., Ehau, T. (2017). Implementation framework for chronic disease intervention effectiveness in Māori and other indigenous communities. Globalization and Health, 13(1), 69. doi:10.1186/s12992-017-0295-8

Systems Thinking

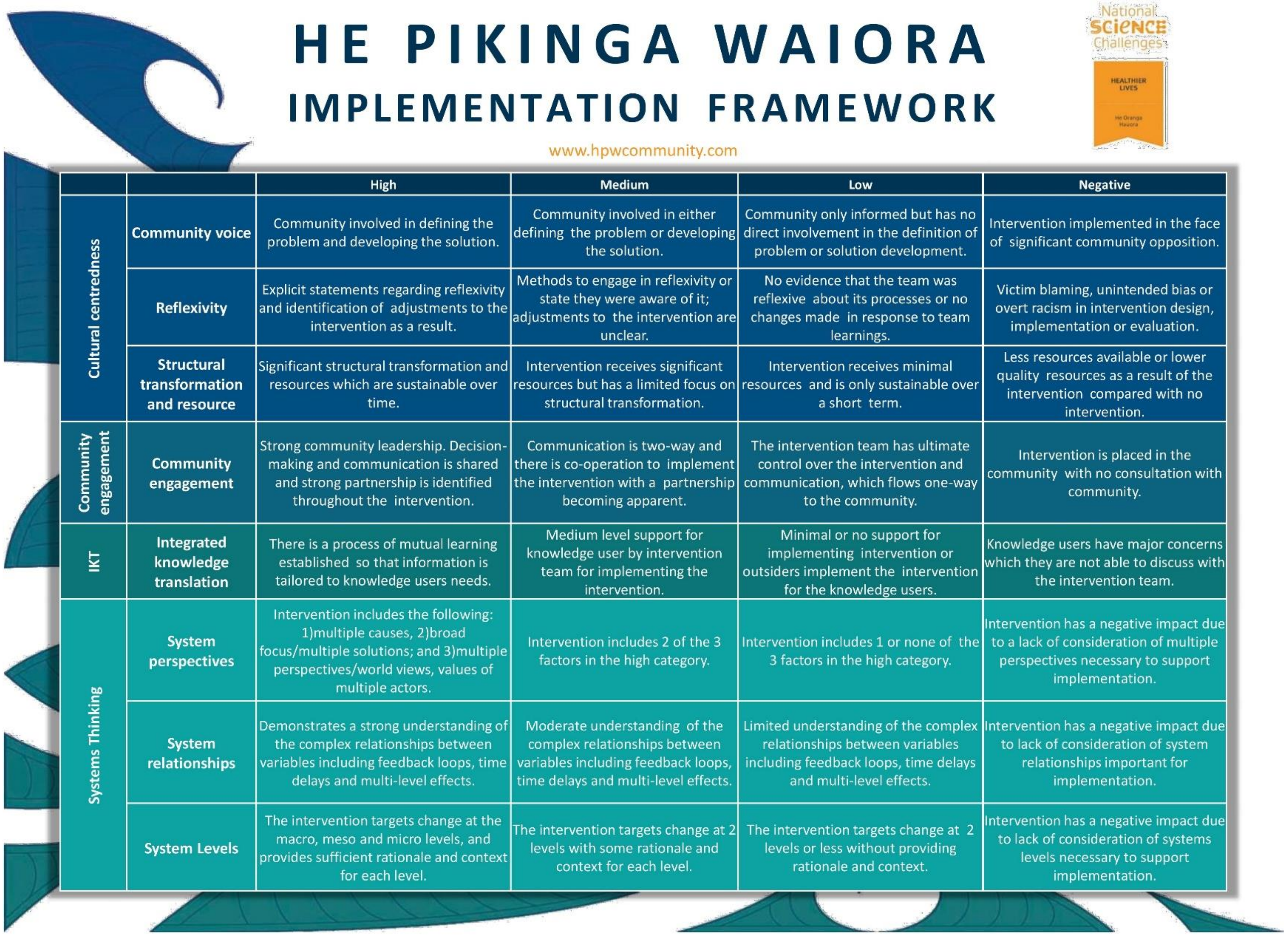
INTEGRATED KNOWLEDGE TRANSLATION
Toi te kupu, toi te mana, toi te whenua

Integration of knowledge translation activities within the context of the community in which the knowledge is to be applied.

There is a process of bi-directional learning established so that information is tailored to knowledge users needs.

Integrated Knowledge Translation

SYSTEMS THINKING
He tina ki runga, he tāmore ki raro
Systems perspectives
Intervention has a broad focus and considers: multiple perspectives, world views, values, causes & solutions.
System relationships
Demonstrates strong understanding of the complex relationships between variables including feedback loops, time delays and multi-level effects.
Systems levels
Intervention targets change at macro, meso & micro levels.



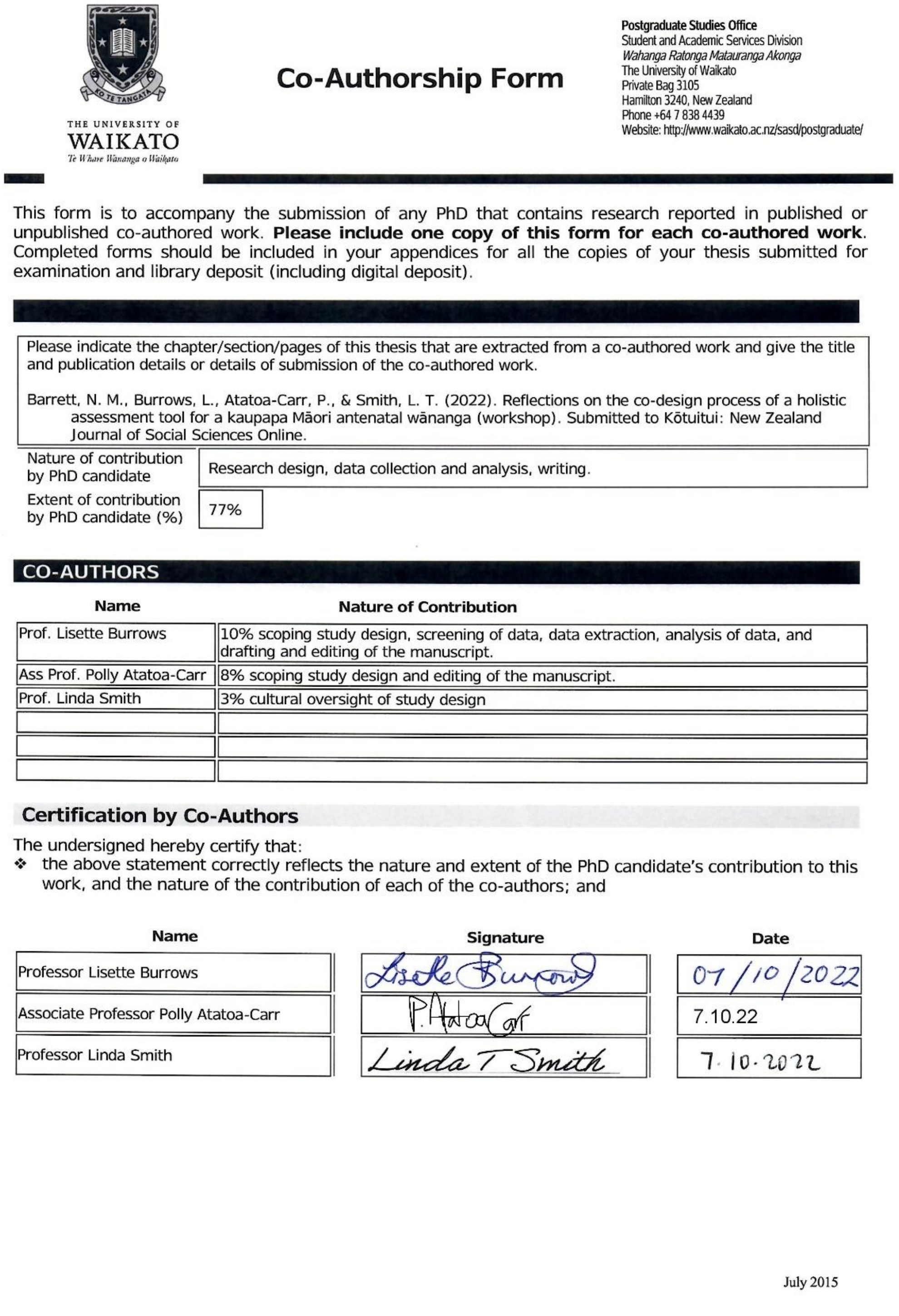
HE PIKINGA WAIORA

IMPLEMENTATION FRAMEWORK

www.hpwcommunity.com

		High	Medium	Low	Negative
Cultural centredness	**Community voice**	Community involved in defining the problem and developing the solution.	Community involved in either defining the problem or developing the solution.	Community only informed but has no direct involvement in the definition of problem or solution development.	Intervention implemented in the face of significant community opposition.
	Reflexivity	Explicit statements regarding reflexivity and identification of adjustments to the intervention as a result.	Methods to engage in reflexivity or state they were aware of it; adjustments to the intervention are unclear.	No evidence that the team was reflexive about its processes or no changes made in response to team learnings.	Victim blaming, unintended bias or overt racism in intervention design, implementation or evaluation.
	Structural transformation and resource	Significant structural transformation and resources which are sustainable over time.	Intervention receives significant resources but has a limited focus on structural transformation.	Intervention receives minimal resources and is only sustainable over a short term.	Less resources available or lower quality resources as a result of the intervention compared with no intervention.
Community engagement	**Community engagement**	Strong community leadership. Decision-making and communication is shared and strong partnership is identified throughout the intervention.	Communication is two-way and there is co-operation to implement the intervention with a partnership becoming apparent.	The intervention team has ultimate control over the intervention and communication, which flows one-way to the community.	Intervention is placed in the community with no consultation with community.
IKT	**Integrated knowledge translation**	There is a process of mutual learning established so that information is tailored to knowledge users needs.	Medium level support for knowledge user by intervention team for implementing the intervention.	Minimal or no support for implementing intervention or outsiders implement the intervention for the knowledge users.	Knowledge users have major concerns which they are not able to discuss with the intervention team.
Systems Thinking	**System perspectives**	Intervention includes the following: 1)multiple causes, 2)broad focus/multiple solutions; and 3)multiple perspectives/world views, values of multiple actors.	Intervention includes 2 of the 3 factors in the high category.	Intervention includes 1 or none of the 3 factors in the high category.	Intervention has a negative impact due to a lack of consideration of multiple perspectives necessary to support implementation.
	System relationships	Demonstrates a strong understanding of the complex relationships between variables including feedback loops, time delays and multi-level effects.	Moderate understanding of the complex relationships between variables including feedback loops, time delays and multi-level effects.	Limited understanding of the complex relationships between variables including feedback loops, time delays and multi-level effects.	Intervention has a negative impact due to lack of consideration of system relationships important for implementation.
	System Levels	The intervention targets change at the macro, meso and micro levels, and provides sufficient rationale and context for each level.	The intervention targets change at 2 levels with some rationale and context for each level.	The intervention targets change at 2 levels or less without providing rationale and context.	Intervention has a negative impact due to lack of consideration of systems levels necessary to support implementation.

Appendix 10: Co-authorship form article 3 chapter 5



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Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Barrett, N. M., Burrows, L., Atatoa-Carr, P., & Smith, L. T. (2022). Reflections on the co-design process of a holistic assessment tool for a kaupapa Māori antenatal wānanga (workshop). Submitted to Kōtuitui: New Zealand Journal of Social Sciences Online.

Nature of contribution by PhD candidate	Research design, data collection and analysis, writing.
Extent of contribution by PhD candidate (%)	77%

CO-AUTHORS

Name	Nature of Contribution
Prof. Lisette Burrows	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Ass Prof. Polly Atatoa-Carr	8% scoping study design and editing of the manuscript.
Prof. Linda Smith	3% cultural oversight of study design

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Professor Lisette Burrows	Lisette Burrows	07/10/2022
Associate Professor Polly Atatoa-Carr	P. Atatoa Carr	7.10.22
Professor Linda Smith	Linda T Smith	7.10.2022

July 2015

Appendix 11: University of Waikato Human Research Ethics Committee approval phase 3

The University of Waikato
Private Bag 3105
Gate 1, Knighton Road
Hamilton, New Zealand

Human Research Ethics Committee
Julie Barbour
Telephone: +64 7 837 9336
Email:humanethics@waikato.ac.nz

THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

13 November 2019

Nikki Barrett
School of Health Sport and Human Performance
By email: nhaereroa@gmail.com

Dear Nikki

HREC(Health)2019#40: Māori co-designed intervention to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hāpu and pēpi

Thank you for submitting the paperwork for Phase 3 of your project, HREC(Health)2019#40.

We are now pleased to provide formal approval for Phase 3, where you will collect the responses of pregnant women to the 'tool' that you have developed, for detailed analysis, with their consent.

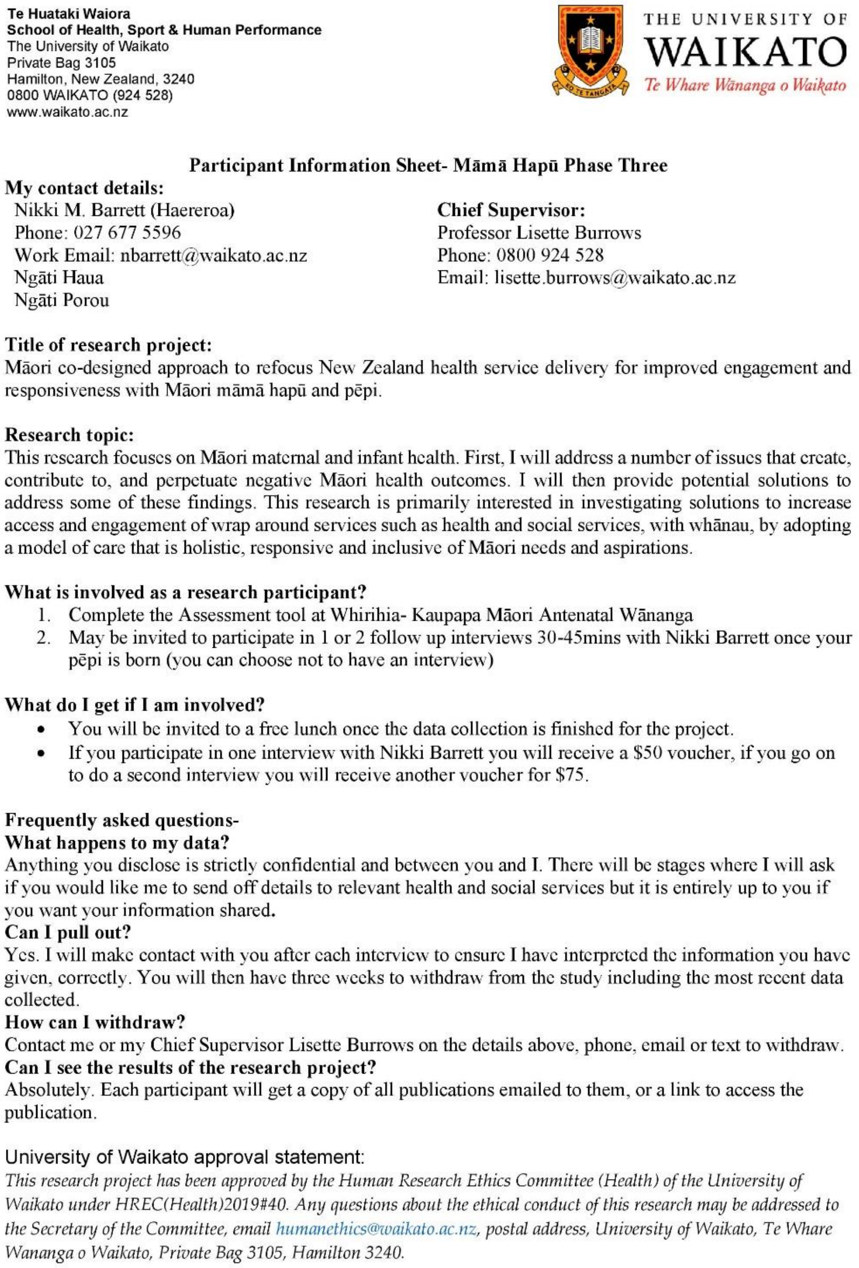
Please contact the committee by email (humanethics@waikato.ac.nz) if you wish to make changes to Phase 3 of your project, quoting your application number with your future correspondence. Any minor changes or additions to the approved research activities can be handled outside the monthly application cycle.

We wish you all the best with your research.

Regards,

Julie Barbour PhD
Chairperson
University of Waikato Human Research Ethics Committee

Appendix 12: Participant Information Sheet māmā hapū



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www.waikato.ac.nz

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Participant Information Sheet- Māmā Hapū Phase Three

My contact details:
Nikki M. Barrett (Haereroa)
Phone: 027 677 5596
Work Email: nbarrett@waikato.ac.nz
Ngāti Haua
Ngāti Porou

Chief Supervisor:
Professor Lisette Burrows
Phone: 0800 924 528
Email: lisette.burrows@waikato.ac.nz

Title of research project:
Māori co-designed approach to refocus New Zealand health service delivery for improved engagement and responsiveness with Māori māmā hapū and pēpi.

Research topic:
This research focuses on Māori maternal and infant health. First, I will address a number of issues that create, contribute to, and perpetuate negative Māori health outcomes. I will then provide potential solutions to address some of these findings. This research is primarily interested in investigating solutions to increase access and engagement of wrap around services such as health and social services, with whānau, by adopting a model of care that is holistic, responsive and inclusive of Māori needs and aspirations.

What is involved as a research participant?

1. Complete the Assessment tool at Whirihia- Kaupapa Māori Antenatal Wānanga
2. May be invited to participate in 1 or 2 follow up interviews 30-45mins with Nikki Barrett once your pēpi is born (you can choose not to have an interview)

What do I get if I am involved?

- You will be invited to a free lunch once the data collection is finished for the project.
- If you participate in one interview with Nikki Barrett you will receive a $50 voucher, if you go on to do a second interview you will receive another voucher for $75.

Frequently asked questions-
What happens to my data?
Anything you disclose is strictly confidential and between you and I. There will be stages where I will ask if you would like me to send off details to relevant health and social services but it is entirely up to you if you want your information shared.
Can I pull out?
Yes. I will make contact with you after each interview to ensure I have interpreted the information you have given, correctly. You will then have three weeks to withdraw from the study including the most recent data collected.
How can I withdraw?
Contact me or my Chief Supervisor Lisette Burrows on the details above, phone, email or text to withdraw.
Can I see the results of the research project?
Absolutely. Each participant will get a copy of all publications emailed to them, or a link to access the publication.

University of Waikato approval statement:
This research project has been approved by the Human Research Ethics Committee (Health) of the University of Waikato under HREC(Health)2019#40. Any questions about the ethical conduct of this research may be addressed to the Secretary of the Committee, email humanethics@waikato.ac.nz, postal address, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

Appendix 13: Interview schedule māmā participants

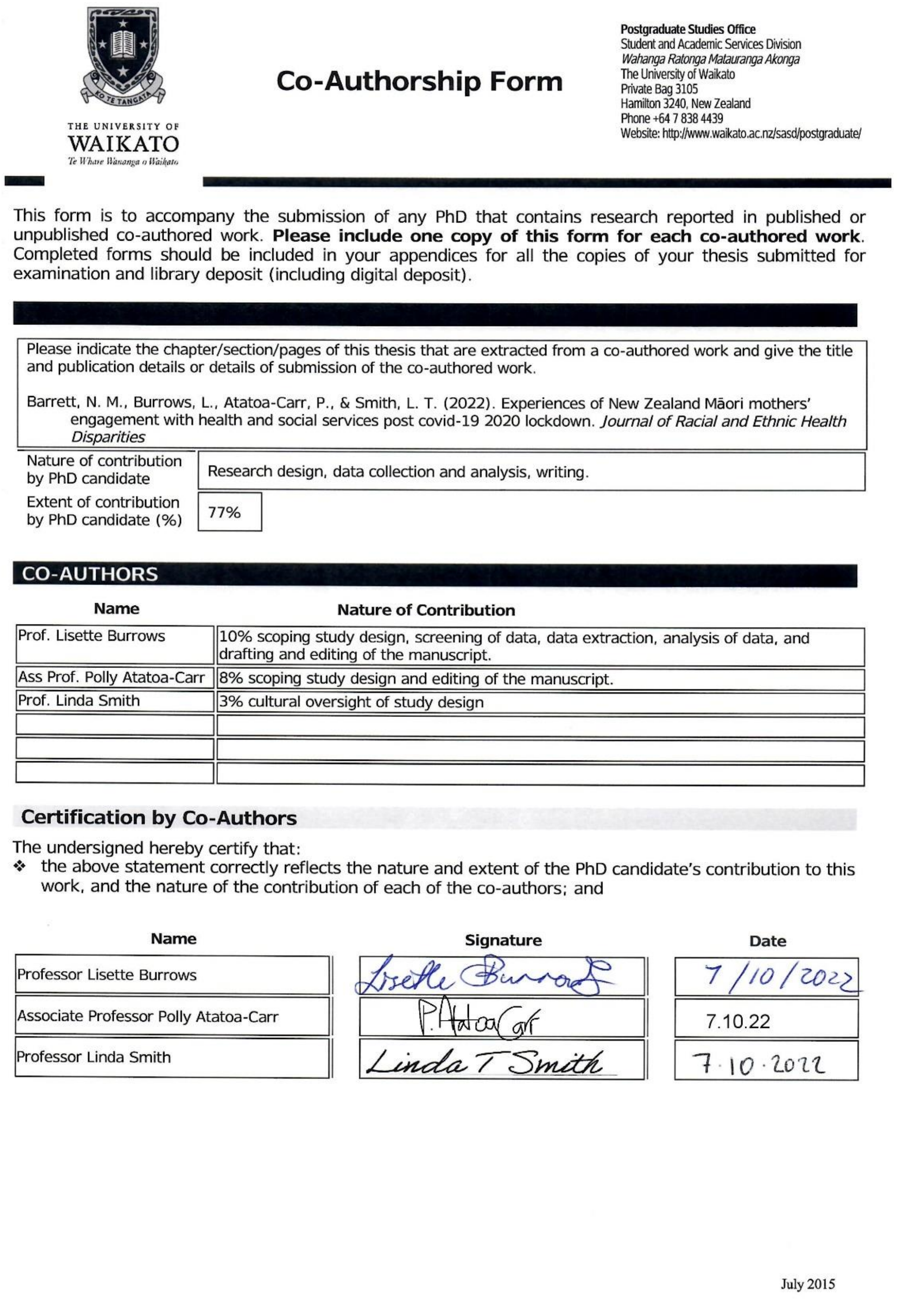
Interview schedule

The following schedule is intended to show the types of questions asked during the in-depth interviews. Given that I used a semi-structured approach, some of the questions may not have been used, or the order may have differed depending on the interview flow, or some questions may have been modified to pursue a line of discussion.

Process and questions for the semi-structured interview

1. Whanaungatanga- although this process was done during the consent period it is important to re-establish a connection with māmā, including how pēpi is.
2. Debrief of research project and what is involved from here- reiterate the ability for whānau to withdraw from the study.
3. Go over responses from survey with māmā.
4. The following questions will guide the semi-structure interview. The nature of these questions have come from a Kaupapa Māori perspective, where the mana of the participant remains intact and they feel comfortable to disclose their true opinions without fear of judgement or consequence. These questions will be asked based on the responses from the Whirihia tool.
    - Did the service engage with you or your whānau after the Whirihia wānanga?
    - Was the service accessible for you or your whānau?
    - If not, why were you unable to access or have access to the service?
    - What was your experience of the service?
    - What factors contributed to this experience, what made it a positive or negative interaction?
    - How will your experience with this service impact on future involvement with this service or services like it?

Appendix 14: Co-authorship form article 4 chapter 6



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Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work**. Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Barrett, N. M., Burrows, L., Atatoa-Carr, P., & Smith, L. T. (2022). Experiences of New Zealand Māori mothers' engagement with health and social services post covid-19 2020 lockdown. *Journal of Racial and Ethnic Health Disparities*

Nature of contribution by PhD candidate	Research design, data collection and analysis, writing.
Extent of contribution by PhD candidate (%)	77%

CO-AUTHORS

Name	Nature of Contribution
Prof. Lisette Burrows	10% scoping study design, screening of data, data extraction, analysis of data, and drafting and editing of the manuscript.
Ass Prof. Polly Atatoa-Carr	8% scoping study design and editing of the manuscript.
Prof. Linda Smith	3% cultural oversight of study design

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Professor Lisette Burrows	Lisette Burrows	7/10/2022
Associate Professor Polly Atatoa-Carr	P. Atatoa Carr	7.10.22
Professor Linda Smith	Linda T Smith	7.10.2022

July 2015

Appendix 15: Impact of research

Publications-

Thorpe, H., Brice, J., Soltani, A., Nemani, M., O'Leary, G., & Barrett, N. (2023). The pandemic as gender arrhythmia: Women's bodies, counter rhythms and critique of everyday life. Gender, Work & Organization, 1-19. https://doi.org/10.1111/gwao.12987

Social Wellbeing Agency. (2022). Te Ao Māori perspective of what works to support wellbeing in the first thousand days. A research report prepared for the Social Wellbeing Agency.

Barrett, N. M., & Masters-Awatere, B. (2021). Co-design report - Evaluation of the co-design process of the Te Whatu Trial of the Bluetooth-enabled Contact Tracing Card. A technical report prepared for the Ministry of Health. Research and Enterprise Unit University of Waikato.

Conference proceedings/presentations-

Barrett N. M. (2022, November). Revitalising traditional Indigenous birthing practices: responsive childbirth education design and delivery- Hapū Wānanga Waikato. Presentation conducted at the International Indigenous Research Conference (IIRC) Ngā Pae o Te Māramatanga, online

Barrett, N. M. (2022, July). Revitalising traditional Indigenous birthing practices: responsive childbirth education design and delivery- Hapū Wānanga Waikato. Presentation conducted at the Pacific Region Indigenous Doctors of Congress (PRIDOC) conference, Vancouver, Canada

Barrett, N. (2020, November). Māmā hapū, services and the maternity system: navigating the maze. Presentation conducted at the Indigenous Knowledge Symposium- International Collaboration, zoom

Barrett, N (2020, August). Māmā hapū, services and the maternity system: navigating the maze. Presentation conducted at the University of Waikato 3MT finals, Hamilton, New Zealand

Barrett, N (2020, July). Māmā hapū, services and the maternity system: navigating the maze. Presentation conducted at the University of Waikato 3MT heats, Hamilton, New Zealand

Barrett, N (2020, June). Māmā hapū, services and the maternity system: navigating the maze. Presentation conducted at the Tukuna kia Rerere University of Waikato Māori 3MT, Hamilton, New Zealand

Barrett, N (2019, April). PhD research brief. Presentation conducted at the Wellbeing Research symposium, Hamilton, New Zealand

Awards-

2022- Fulbright Ngā Pae o Te Māramatanga awardee

2020- Tukuna kia Rere University of Waikato Māori 3MT- First Place

2022- University of Waikato Doctoral Scholarship

2019 to 2021- Ngā Pae O Te Maramatanga PhD Excellence Scholarship

2020- University of Waikato 3MT Doctoral Competition Prize- Runner Up

2020- University of Waikato 3MT Doctoral Competition Prize- People's Choice

2020- Tukuna kia Rere University of Waikato Māori 3MT- Runner Up

Involvement in other research projects-

2020 Health Research Council New Zealand Health Delivery Research Project Grant (2021-2024)

Research Title- The determinants of health for Māori mothers and adults with chronic diseases. Investigators- Prof Ross Lawrenson, Dr Nina Scott, Dr Jade Tamatea, Assoc Prof Polly Atatoa Carr, Dr Amy Jones, Dr Lynee Chepulis, Dr Ryan Paul, and Mrs Nikki Barrett.

2021 A Better Start and Cure Kids Fund

Research Title- Preparing our tamariki for successful learning: A values-based approach to the development of movement competence by young children", has been approved by the Boards of A Better Start and Cure Kids. Investigators- Prof Rich Masters (PI), Dr Apo Aporosa (Co-I), Mrs. Nikki Barrett (Co-I)

University of Waikato Strategic Research Fund 2021

Research Title- Relationship between glucose monitoring technologies, glcyaemic control and self-care practices: A sequential mixed methods study. Investigators- Dr. Hamish Crocket, Dr. Ryan Paul, Dr. Chaitanya Joshi, Mrs. Nikki Barrett, and Dr. Tom Kavanagh.

University of Waikato Research Project 2021-2022

Research Title- Creating culturally responsive rural doctors: Māori and Pacific perspectives and aspirations. Investigators- Professor Roger Strasser, Mrs Nikki Barrett, Dr Gloria Clarke, Dr Apo Aporosa, Victoria Mai, and Janina Galewski.

Appendix 16: List of scholarly works

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