He Tapu te Whare Tangata, he Taonga te Mokopuna

The Effects of Perinatal Stress on Mokopuna Mental Health

2025 Summer Internship Report

Nā Sami Harrison

The Effects of Maternal Perinatal Stress on Mokopuna Mental Health

Background

Ko wai au? Ko Sami Harrison ahau, he uri au nō Te Tai Tokerau, Ngati Maru ki Hauraki me Ngati Ruanui ano hoki. E noho ana au ki Otepoti, he akonga tau tuatoru ahau ō Otākou Whakaihu Waka kei roto i te Neuroscience Programme.

As part of my summer internship within Waiora Whānau WRR at Te Oranganui, I have been instructed to research mokopuna mental health in the first 2000 days and the effects of mokopuna mental unhealth on rangatahi. This piece of literature highlights the main contributors of perinatal stress, its impact on mokopuna mental health and attachment and the consequences on rangatahi outcomes.

Purpose

The purpose of this mahi is to highlight the necessary changes required to strengthen the support for Hapūtanga Wānanga and Te Whare Piringa, focusing on addressing perinatal stress in culturally safe and meaningful ways. By incorporating the perspectives of Māmā, whānau, and health professionals, it emphasizes the importance of continued investment in these spaces.

Acknowledging the need for a more effective and inclusive approach, there is a commitment to enhancing the accessibility, relevance, and responsiveness of support systems for perinatal mental health across the rohe. This transformation seeks to build a shared understanding and collective responsibility for the changes needed to better support Māmā and their whānau.

The insights and priorities gathered through community engagements are crucial in informing Strategic Leadership Groups to continue to invest in and support Hapū Māmā Initiatives, Hapūtanga Wānanga and Te Whare Piringa.

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We are thankful to the Māmā who participated in interviews and surveys. Sharing your stories and aspirations for your pepī's futures provided meaningful insight into the wants and needs of the Hapū Māmā community.

Whakataukī

"He tapu te whare tangata" which means literally the house of man is sacred. Te Whare Tangata is the name given for the womb of māmā and reflects the idea that wahine are the first home for mankind. This whakataukī also highlights and reflects the importance of wahine Māori and the role they play in our society. Within mātauranga Māori, wahine are central to the inner workings of society and house the next generations of mokopuna within them. This is important to remember as the environment of te whare tangata lays the foundations for pepī, in all aspects of life. The wellbeing of our Māmā shapes the lives of our next generation. To uplift our future generations, we first must uplift the ones that carry them into tomorrow.

With that being said, the next whakataukī comes to mind; ***"he taonga te mokopuna, kia whāngaia, kia tipu, kia rea,"*** which means a "child is a treasure, to be nurtured, to grow, to flourish." Our mokopuna are the next generation and will be the ones to carry our mātauranga, tikanga and whakapapa into the future, they are our greatest treasures. So although te whare tangata lays the foundations for pepī, their full potential is determined by the village that surrounds them, nurturing them, allowing them to flourish. Thus it is important to remember both whakataukī. Both environments—antenatal and postnatal—are integral to building healthy and thriving mokopuna, rangatahi, and pakeke for the future.

Challenge

Ngā piki me ngā heke – Understanding Stress

Stress is a common feeling that more than half the world experiences every single day and is a complex umbrella term for a state of mental tension caused by a difficult situation. Most people experience ngā piki me ngā heke, the normal ups and downs of life while others can be subject to extremely traumatic events that negatively impact their ability to function.

Alarm Phase

The short term stress response, coined 'fight or flight', was theorised by Walter Cannon in the 1930's. Cannon theorised that animals react to threat via discharge of the sympathetic nervous system (Wikipedia Contributors, 2024). This is now observed as activation of the stress response via release of norepinephrine/noradrenaline from the adrenal medulla. Adrenaline activates the alarm phase of the stress response which includes vascular changes throughout the body. Put simply this increases your heart rate and sweating to prepare your body to run away or fight (Chu et al., 2024).

Resistance Phase

If stress continues, the resistance phase is activated. Cortisol is released and acts on your metabolism to increase your blood sugar levels so the brain has more glucose input. This increases the productivity and circuitry in the brain, increasing alertness and speed of reactions (Chu et al., 2024).

Exhaustion Phase

The exhaustion phase hits when the body's ability to reduce stress is severely impacted, especially under persistent stress. This usually occurs after weeks or months of the resistance phase, commonly seen in children experiencing famine and war. This phase usually results in permanent damage of the body, hormonal organs, cardiac arrest or death (Chu et al., 2024).

Perinatal stress and its prevalence in Aotearoa

Perinatal stress is the elevation of maternal cortisol levels exacerbated due to the influence of pregnancy hormones and other social, cultural and environmental stressors.

There are several manifestations of perinatal stress and among the most common are depression and anxiety. Perinatal depression and anxiety can range from excessive sadness and worrying to persistent low mood, overthinking or intrusive thoughts. In Aotearoa, 12-18% of pregnant women are clinically depressed and around 30% of pregnant women experience sub-clinical depression—symptoms of depression that fall below the diagnostic level (Wilkinson et al., 2022). In Whanganui alone, between 2020 and 2021, a total of 358 Māmā were referred to secondary Specialist Maternal Mental Health Services, for moderate to severe mental health issues (Healthy Families, 2023). However, due to the strict requirements of maternal mental health services, approximately 75% of Māmā are not meeting criteria. This rose to 95% of Māmā not meeting requirements, exacerbated by staff shortages and limited resources (Maternal Care Action Group NZ, 2022). Research says the prevalence of unmedicated depression in pregnant Māmā is 11.8%. Additionally there are higher rates of unmedicated depression among young, Māori, Pasifika and Asian Māmā (Svardal et al., 2021) which is alarming as perinatal distress has significantly worse health outcomes left untreated (Svardal et al., 2021).

Women also have higher rates of mental unhealth (StatsNZ, 2022), therefore pregnant māmā are among the most vulnerable for experiencing mental unhealth at any time in the perinatal period. In order to whakapiki the health of our future generations, we must first support those that carry them because perinatal stress can have devastating effects for whānau. Suicide is the leading cause of maternal death in Aotearoa with approximately 10 maternal deaths occuring each year (Walker, 2022) Aotearoa's maternal suicide rates sit six times higher than that of the UK, and wahine Māori are three times more likely to commit suicide than Pakeha (Maguire, 2022). Māmā who suffer from pre-exisiting mental health conditions such as perinatal depression or anxiety are at higher risk of choosing suicide (Walker, 2022).

Studies show that women with depression have elevated levels of pro-inflammatory cytokines, increased diurnal cortisol response and blunted

cortisol awakening response – this indicates an impaired stress response. Antenatally, elevated cortisol levels have a negative impact on placental functioning. The placenta acts as a protective layer from Māmā's cortisol and expresses the enzyme 11-beta-hydroxysteroid dehydrogenase-2 (11b-HSD2) which converts cortisol to its inactive form cortisone (Wilkinson et al., 2022). Maternal stress can downregulate the functioning of 11b-HSD2, leading to cortisol passing through the placental membrane and acting on pēpi.

Kia whāngaia, kia tipu, kia rea—Understanding Mokopuna Mental Health and Attachment

Mokopuna mental health can be defined as cognitive, social and behavioural development up to five years which lays the foundations for future cognitive, social and behavioural skills and abilities as rangatahi. Mokopuna mental health is largely mediated by the understanding and responsiveness from primary caregivers. Creating nurturing spaces for mokopuna to grow and flourish allows for the optimal development of mokopuna functioning in all aspects. This is also important in managing mokopuna mental distress. As adults, we have knowledge and capability to manage our own distress, whether that be going for a walk or reaching out for help. Mokopuna are unable to manage their own distress and do not have the capability to ask for help, therefore, mātua / caregivers are responsible for noticing, understanding and reacting to mokopuna needs.

Attachment Theory is the idea that the initial relationships our mokopuna form sets up how they will form future relationships with themselves, others and the environment around them. Originally, attachment theory was just the idea that pepī have innate behaviours to keep people around them for survival. From there it was discovered that it was really how mātua / caregivers reacted to their pepī's needs that the initial relationship was formed and thus maintenance was dependent on the consistency and reliability of mātua / caregivers. There are a number of different Attachment Styles, which can help us understand the initial relational development of a pēpi and the influence of perinatal stress.

Secure Attachment occurs when matua/caregivers are consistently reliable and nurturing when interacting with pepī. When pepī is distressed, mātua/caregivers react appropriately to soothe pepī, regulating pepī's stress response and become a secure base from which pepī can learn and explore. This attachment

style is frequently associated with more positive mokopuna and subsequently rangatahi/pakeke outcomes (McGarvie, 2024)

There are three types of *Insecure Attachment*: *Avoidant Attachment*, *Ambivalent/Resistant Attachment* and *Disorganised Attachment*. Insecure attachments are often associated with multiple negative outcomes for mokopuna and rangatahi/pakeke. Avoidant Attachment occurs when mātua/caregivers are openly rejecting of pepī or emotionally unavailable to mediate pepī's distress. Ambivalent/Resistant Attachment occurs when mātua/caregivers are inconsistent with the way they respond to pepī's needs—one minute they may be warm and caring and the next they may be aggressive or they may not be there at all. This can occur for a number of reasons, mental health and life circumstances being the most obvious. Disorganised Attachment occurs when mātua/caregivers are the source of pepī's distress and is the most common type of attachment for pepī who have been abused or neglected.

Different attachment styles are linked with different outcomes later in life, however, attachment style is not a definitive indicator of later life outcomes. That being said, pepī who develop insecure attachment styles may have no negative impact on their later life because of the environment of their early and later childhood. This is evident in the studies that suggest early adoption can help minimise the effects of perinatal and pre placement risk factors for mokopuna in foster care (Tung et al., 2019).

Ngā mokopuna—How does Perinatal Stress impact Mokopuna Mental Health?

Birthing and parenting challenges

Most notably, perinatal stress is associated with preterm and low-weight births, with untreated perinatal stress increasing risk significantly. Preterm and low-weight births are linked to fussier temperament as well as negative mental health outcomes in pepī (de Weerth et al., 2022). Poor temperament in turn can lead to unideal parenting techniques making bonding harder. Complications in bonding may have a negative impact on the style of attachment pepī uses. For example, a fussier pepī may lead to māmā and pāpā becoming overwhelmed and reacting appropriately to pepī's needs may be more difficult. Māmā and Pāpā may resort to inappropriate parenting techniques like yelling, crying or

physical abuse, influencing the development of attachment styles. Consequently, perinatal stress can exacerbate the likelihood of reacting inappropriately.

The need for intensive care of premature pepī can impact mātua abilities to bond and soothe their pepī physically which may cause problems with attachment in early childhood (Mangelsdorf & Forsch, 1999) and heighten perinatal stress further. Wahine Māori are most likely of all ethnic groups in Aotearoa to experience premature birth as low socioeconomic status and high deprivation both increase the risk of premature birth (Davie & Champion, 2022). Admittance of pepī to NICU / SCBU may also impact mātua capability of bonding with pepī, limiting physical contact and potentially heightening anxieties about not bonding with pepī.

Abnormal Stress Responses

Biologically, perinatal stress can impact the development of pepī's HPA axis. The HPA axis is the hormone coordination loop made up of the hypothalamus, pituitary gland and the adrenal glands, which controls the human stress response. Because attachment theory is based on mātua response to pepī stress, an impacted HPA axis may lead to abnormal stress responses from pepī. These responses may be missed by mātua or may not warrant appropriate response from mātua/caregiver, leading to a possible insecure attachment forming. Additionally it can alter Māmā's HPA axis (Duthie & Reynolds, 2013), resulting in an increased likelihood of postnatal depression and mood disorders which may impact Māmā's ability to appropriately navigate their pepī's distress.

Cognitive Development

Prenatal stress can put mokopuna at increased risk for ADHD, conduct disorder, anxiety and depression, cognitive problems and school problems and is also linked with an increased risk of ASD in childhood and Schizophrenia in adulthood (Herba & Glover, 2021). Posner et al (2016) explored associations between perinatal maternal depression and infant brain development, finding that maternal depression is linked to genetic vulnerabilities in pepī brain structures like the amygdala and hippocampus—two brain areas associated with emotion, memory and learning and implicated in affective disorders .

Many aspects of perinatal stress have been found to increase the risk of a preterm birth and low-birth weight, which are linked with many adverse outcomes in adulthood. Rangatahi, who were premature, have higher rates of welfare dependence, fewer relationships and lower rates of tertiary education. Premature birth is also associated with poorer mental health including poorer brain myelination and premature ageing and the presentation of ADHD, ASD and anxiety characteristics. Perinatal stress also increases risk of conduct disorder. It is important to note that, although the impact on learning, behaviour and peer relationships is significant, these challenges are 'unseen', subtle difficulties (Te Whatu ORa, 2023).

Physical Health and Male Fertility

Premature birth leads to poor physical health outcomes such as cardiac and respiratory difficulties as well as disrupted cognitive function due to immature hormonal systems (Davie & Champion, 2022). Poor health as an adult is frequently associated with poor fertility (World Health Organisation, 2024). Studies also show that stressful life events during pregnancy may impair sperm count and morning testosterone levels in tane (Robertson, 2019), which can lead to fertility issues later in life. Inadequate fertility in tane can be associated with disrupted placental building, possibly leading to complications during pregnancy (Howard, 2018). Although this may not impact current mokopuna mental health directly, it can indirectly impact the next generations. As explored above, complications during pregnancy leading to preterm or low-weight births have profound effects on mokopuna mental health and subsequently the mental health of mātua.

Psychological Resilience

Psychological resilience is the ability to adapt and overcome difficult situations. Children of Māmā who experience perinatal stress and have suboptimal mental health during pregnancy are at risk of impaired executive function and lower psychological resilience (Te Whatu Ora, 2023) Additionally, attachment styles play a large part in determining psychological resilience. In an ideal world, mokopuna, without an already lowered psychological resilience, who develop safe and secure attachments are built to be confident and able to appropriately understand and react to new and uncomfortable scenarios. Impaired psychological resilience is associated with adverse outcomes for rangatahi and

increased vulnerability, additionally, psychological resilience can act as a buffer for adverse childhood experiences (Morgan et al, 2021)

He aha ai — What contributes to perinatal stress?

Trauma

Trauma is a deeply impactful emotional response to distressing events that overwhelm an individual's ability to cope. According to the American Psychological Association (2024), trauma can stem from terrible occurrences such as accidents, crimes, natural disasters, abuse, neglect, violence, the loss of a loved one, or experiences of war. It encompasses both physical and emotional dimensions, affecting individuals differently based on their personal circumstances. As described by Psychology Today (2025), trauma arises when an event generates emotional distress so intense that it exceeds one's capacity to process or digest it. This overwhelming experience can leave lasting psychological effects, shaping how individuals perceive themselves, others, and the world around them. Short term reactions like shock and denial are common occurrences after the traumatic event. Long term reactions include difficulty managing emotions that are unpredictable leading to strained relationships and flashbacks as well as physical manifestations of the trauma like headaches and nausea. During traumatic events, the stress response is activated.

Relationships

Hapūtanga is a time of many changes in many areas of life. For some Māmā, this time is uncomfortable, overwhelming and difficult–creating a negative experience of their hapūtanga. This burden is relieved by love and affection, making it easier for Māmā to work through the many physical and emotional changes they are experiencing. Māmā who don't have secure support systems around them are more likely to experience perinatal stress, highlighted particularly by the increase in maternal stress during the pandemic (Al-Mutawtah et al., 2023). A more devastating scenario where the source of stress is Pāpā further isolates Māmā from safe and secure support. Rates of intimate partner violence in Aotearoa are significantly higher than that of other OECD countries (Lawrence, 2023) and, although research indicates that intimate partner violence rates are higher among Māori women, 58% compared to 34% for non-Māori (Fanslow & Robinson, 2011), the social deprivation hypothesis

suggests that IPV rates are exclusive of social deprivation, pushing systematic inequalities over ethnic background (Marie et al., 2008). This exposure to partner trauma significantly increases the presence of perinatal stress.

Socioeconomic status

More than 60% of Whanganui reside in high deprivation areas, this figure is almost doubled in comparison to the national average which sits at just under 40 percent–highlighting Whanganui's significant socioeconomic disparities (WDC, 2023). Areas of high-deprivation are characterised by inadequate access to appropriate housing, healthcare and essential services. Subsequently, these areas have increased financial hardship. Māmā who experience low socioeconomic status are more vulnerable to environmental stressors like financial hardship, poor physical and mental health and worse life outcomes (The Royal Australian and New Zealand College of Psychiatrists, 2023; Ministry of Health, 2021; Low et al., 2021; Walker, 2022). Around 70% of our Whanganui mokopuna are born into areas of medium to high deprivation, highlighting Whanganui's significant transmission of intergenerational socioeconomic disadvantage (Healthy Families, 2023)

Due to the correlation between preterm birth and socioeconomic status, parents of premature pepī are more likely to enter parenthood with health, social, psychological and economic vulnerabilities and māmā of premature pepī are more vulnerable than other māmā (Davie & Champion, 2021) Another characteristic of low socioeconomic status and high deprivation is decreased rates of education (American Psychological Association, 2017). While this is not a risk factor of perinatal stress, lack of education may mean Māmā lack self-efficacy in mitigating their own perinatal stress and/or accessing services to support them in working towards Māmā and whānau efficacy.

Teen pregnancy

Additionally, low socioeconomic status and high-deprivation is associated with teen pregnancy. A hapūtanga is a journey and for some it is a rough time filled with emotional and physical challenges. These physical challenges are often more difficult during adolescent pregnancy and psychological immaturity can exacerbate the effects of emotional distress that comes during pregnancy (de Weerth et al., 2003). The Māori population is considerably younger than the

general population of Whanganui. In 2018, the median age for Whanganui was 43 years while the median age for Māori was just 26 years (WDC, 2023). This indicates that around 50% of the Māori population are of Rangatahi age or younger. Although the birth rate among teenage mātua (15-19 years) has more than halved from 25% in 2012 to 11% in 2022 (StatsNZ, 2022), teenage pregnancy still occurs and young Māmā and Pāpā are still in need of maternity support. In particular, Māori still make up the majority of teen births in Aotearoa. This is concerning as rangatahi are more likely to experience mental distress and are more likely to lack the knowledge to access the right type of support they need (Mental Health Foundation for New Zealand, 2023).

A study found that teen Māmā have a higher prevalence of premature birth (Diabelková et al., 2023). There is also evidence to suggest that teen pregnancy is, in a sense, hereditary. Another study conducted in America, among African-American and Latina communities, found that the risk of teenage pregnancy was increased if Mum and/or a sister had a teen pregnancy compared to young women with no family history of teen pregnancy (East et al., 2007). This highlights the importance of recognising intergenerational disadvantage, as it is perpetuated by the complex interactions of contributory factors like socioeconomic status and high-deprivation. The study also indicated that the closer the relationship was between sisters, the higher the risk of teen pregnancy. This is important to note as close whānau relationships underpin many indigenous societies, including Māori, highlighting the need for concern.

Drug & Alcohol Addiction

Drug and alcohol addiction is a disruption of the brain's reward system involved in many aspects of cognitive functioning, namely, learning, memory and attention (NIDA, 2020). Many aspects of drug and alcohol addiction are harmful not only to the individual but to whānau and communities. Drug and alcohol addiction are comorbidities with mental unhealth and distress. While drug and alcohol addictions are common outcomes for people with mental unhealth as means of self-medication / treatment, drug and alcohol addiction can also be contributors to mental unhealth by altering brain structure and function (NIDA, 2020). Drug and alcohol addiction is high among areas of low socioeconomic status and high deprivation (New Zealand Drug Foundation, 2024). As well as the physical harms from alcohol and drug exposure during hapūtanga, Māmā with drug and alcohol addictions are also less likely access prenatal care, have higher

rates of sexually transmitted disease / infections, and present with many other comorbidities associated with poor mental health and addiction (Wong et al., 2011).

Alcohol consumption is very common within New Zealand, with 4 in 5 adults consuming alcohol in the past year and 21.9% of past-year drinkers being reported as hazardous (ActionPoint, 2021) Alcohol consumption is extensively linked to adverse outcomes for pepī. There is no data on the prevalence of Fetal Alcohol Spectrum Disorder (FASD) in Aotearoa, but international studies suggest that around 3 to 5% of people may be affected by antenatal exposure to alcohol. This implies that around 1800-3000 pepī may be born with FASD each year in Aotearoa (Te Whatu Ora, 2018). It is known that any amount of alcohol consumption during gestation can lead to FASD and one in five women report drinking during pregnancy, meaning at least one in five pepī are exposed to alcohol antenatally with the risk of developing FASD (Ministry of Social Development, 2022). Research found that the estimated prevalence of pepī born with FASD to be between 1-2% with Māori having significantly higher prevalence of FASD, aligning with the higher prevalence of drinking among Māori (Romeo et al., 2023). According to several pieces of literature (Wouldes, 2009), alcohol consumption is frequently accompanied by smokes / vapes and the usage of other drugs. Although it is evident the harm alcohol causes in our country, especially to our mokopuna, minimising alcohol harm is extremely difficult when drinking is so prevalent and drinking culture infects every aspect of our lives as New Zealanders.

Marijuana is the most common illicit substance consumed across the globe (NIDA, 2019) and the second most common psychoactive drug used during pregnancy (Renard & Konefal, 2022). Although there is a lack of literature regarding the effects of cannabis on the developing pepī, cannabis use is associated with reduced fetal growth in later pregnancy, low birth-weight and an increased risk of preterm birth (Renard & Konefal, 2022)—all of which may lead to pepī being admitted to NICU or SCBU. Pepī who are exposed to ‘hard’ drugs like methamphetamine or heroin are not only at risk for developing physical and mental health problems but also at developing an antenatal addiction to said drug if Māmā abused the drug daily. Drug-dependent pepī will usually go through withdrawal postnatally and depending on the type of drug, this can be potentially fatal to pepī. Withdrawal requires postnatal care and the extent of

care depends largely on the severity of exposure as well as the drug pepī was exposed to. Additionally, the impact of antenatal drug exposure lies beyond initial postnatal care, extending to burden on not only the health system but the justice and education system (Popova et al., 2016)

Maternity and Mental Health Services in Aotearoa and Whanganui—What's not working?

Summary of key findings from Maternal Mental Health Service Provision in New Zealand (Ministry of Health, 2021)

District Health Boards (DHBs) were reporting an increasing complexity of psychosocial and mental health needs among women, with concerns about inequitable service delivery for Māmā who fall within subclinical levels of mental distress. Additionally, Wāhine Māori, Pacific, and Asian women, who are likely to have higher levels of need, appear to be underrepresented in accessing these services. This further highlights the need to address systemic inequalities in maternity mental health care.

Cultural models of care are insufficient, with only half of the DHBs offering kaupapa Māori services, and very few providing tailored support for Pacific or Asian women. There are also critical gaps in the continuum of care, as specialist maternal mental health services are overstretched due to inadequate support in the community and primary healthcare, particularly in areas like psychological therapy, effective screening, and early intervention. This emphasises the need for whānau centred, wrap-around services to support Māmā as well as the incorporation of mental health services within these whānau centred services.

Workforce shortages further exacerbate these issues, limiting the ability to expand community-based support and kaimahi development. DHBs highlight the need for more professionals, especially psychiatrists, psychologists, and peer support workers, as well as better training for staff across maternal mental health services and related healthcare sectors. Additionally, eligibility criteria for accessing maternal mental health services require women to have a live child, leaving those who have lost a baby, experienced birth trauma, or do not have their baby in their care without adequate support. This underscores the need for alternative pathways to address their mental health needs.

Summary of insights from Te Whakapiringa ki Tetahi Whare Kohungahunga / Hapū Māmā Village (Healthy Families, 2023)

Although maternity services in Whanganui are committed to hapūtanga care, many Māmā face significant challenges in terms of accessibility and adequacy of care. Many whānau struggle to locate and engage with services, leading to

frustration and feelings of disconnect with mainstream services. Māmā also voiced their feelings of exclusion from decision making processes, leading to experiencing neglect and judgement during critical moments of their hapūtanga journey's. This can all have a negative impact on Māmā's mental health, heightening anxieties and depression leading to the exacerbation of perinatal stress.

Another clear gap in maternity services is inadequate preparation and education about postnatal depression, highlighting the inequities in addressing mental health during the hapūtanga journey. Additionally, disjointed systems disrupt the continuity of care as Māmā transition through different maternity services. Workforce fatigue exacerbates the impacts on quality and consistency of care. This is alarming as Māmā who feel unsupported are more likely to experience perinatal stress and have a negative hapūtanga experience. There was also a strong desire for culturally safe environments that support tūpuna practices, led by kaimahi who understand and respect Te Ao Māori. This highlights the need for integration of mātauranga and kaupapa Māori back into birthing and parenting practices.

Whānau Voice

Insight #1

The lack of prenatal education and support means that Māmā have to learn to manage their perinatal stress themselves through lived experience, which can be a significant contributor to heightened perinatal stress.

"This is baby number four and by far the most support we've received"

Being in new and unfamiliar parenting territory were the most challenging times for finding the right support for Māmā. These spaces could look like new parents navigating the new challenges of hapūtanga and parenting or navigating unfamiliar spaces like when pēpi gets sick. Stress often stems from the combination of the physiological, emotional, and external factors such as financial pressures and a lack of adequate support systems. For Māmā, learning how to mitigate stress can be a challenge especially when the hapūtanga journey is already challenging enough. Likewise, managing your own stress can prove difficult when having to manage your pepī's distress as well.

Understanding the roots of stress and how to respond appropriately is key to managing it. We understand that mitigating stress in these times requires both knowledge and tools such as effective coping strategies, emotional regulation techniques, and access to supportive environments (Walker, 2022). However, we also found that, for some Māmā, these tools were not readily available in their kete due to it either not being included in their prenatal education, because they opted not to go or because they didn't know they should or needed to access pre or antenatal services. This meant that Māmā often had to learn to mitigate perinatal stress by trial and error through lived experience or through whānau, this often led to hapūtanga becoming characterised as a stressful time.

For some mātua, hapūtanga and parenthood is characterised by a steep learning curve resulting in a sense of learning by trial and error. This then raises the concern that older children can unintentionally be treated as 'test dummies' for their younger siblings as mātua refine coping with stress through finding the appropriate support overtime. This is consistent with the literature suggesting that the experience gained by parents while raising older children can influence

their expectations and improve their parenting skills for younger tamariki, suggesting that this also includes mitigating perinatal stress through more efficient learned parenting practices (McHale et al., 2012; Whiteman et al., 2003; Amici et al., 2022). Additionally, the literature also suggests that the presence of older siblings may contribute positively to younger siblings' emotional, social, and problem-solving development, which are linked to greater social competence and emotional understanding later in life for the younger sibling (Amici et al., 2022).

Insight #2

The Hapūtanga Wānanga prototype fostered shared learning experiences by connecting Māmā to each other, demonstrating that shared peer experiences within a kaupapa Māori environment can help to mitigate maternal perinatal stress.

> "Hapū Māmā Wānanga were helpful and educational. I learned about safe sleep, birthing and connecting with other Māmā"

> "The shared experiences I got to be a part of through Hapū Māmā Wānanga was awesome"

For generations, Māmā were taught about hapūtanga and Māmā-hood by whānau members and hapūtanga knowledge was held by our community. Tūpuna practices ensured that whānau shared their wisdom and supported Māmā through their hapūtanga journey, providing practical knowledge but also mitigating perinatal stress with strengthened connections to whānau. With the introduction of a mainstream, individualistic approach to healthcare and the suppression of tūpuna practices, maternity care was redirected from whānau to Western healthcare providers. This systemic change isolated Māmā to the point where Māmā were entering hapūtanga and Māmā-hood with little to no whānau support and knowledge, heightening the risk of experiencing perinatal stress.

The Hapūtanga Wānanga prototype offers a pathway toward addressing these challenges by reclaiming tūpuna practices and fostering collective learning within a kaupapa Māori space. The wānanga spaces of Te Whare Piringa have been described as a safe and supportive environment where Māmā can learn together, share experiences, and reconnect with their mātauranga. The

Hapūtanga Wānanga not only helps to alleviate perinatal stress but also builds Māmā self-efficacy, empowering them to embrace their roles with greater confidence.

Hapūtanga Wānanga foster connections to tūpuna practices and cultural belonging, offering opportunities to break cycles of intergenerational trauma. By providing Māmā with traditional knowledge, peer support, and more culturally safe spaces, wānanga empower them to navigate hapūtanga with pride, reducing the likelihood of stress and trauma being passed down. Decolonising the maternal health system involves validating tūpuna practices and integrating them with contemporary antenatal education. Kaupapa Māori initiatives like Hapūtanga Wānanga have the potential to transform maternal care, ensuring Māmā feel supported, connected, and equipped for the challenges of hapūtanga and beyond.

Insight #3

There is a lack of information and education about perinatal stress available in the community, therefore the community and Māmā lack awareness about perinatal stress.

> "Stress can be heavy for a mum, its many jobs–not just one"

Hapūtanga is a journey filled with learning, not just during pregnancy, but long after the birth. For Māmā, this can be a transformative time, one that brings new responsibilities, expectations, and challenges. We know that tūpuna practices, holding community knowledge at their core, have been eroded by this shift towards individualised and Western-centric approaches to maternal care. However, despite this shift, we see that Māmā today still seek much of their practical hapūtanga advice and support from whānau and their wider community. The erosion of this communal knowledge base has left some Māmā without any knowledge about perinatal stress, coping mechanisms, and collective care. This often leaves them entering the journey of motherhood without the necessary knowledge or tools to manage and overcome the barriers they face.

Knowing this, rebuilding this communal knowledge should become a priority for us. Reconnecting with the collective knowledge of tupuna and fostering a culture

where the community plays a central role in supporting Māmā can help restore balance and promote healthier perinatal experiences. This includes encouraging whānau to share their wisdom, engage in open dialogue about perinatal stress, and provide a network of support that values both modern and traditional approaches. By doing so, we can empower Māmā to manage stress and build resilience in the face of ongoing challenges, and ensure that future generations benefit from the strength of a united and knowledgeable community.

Insight #4

When Māma understand that they are one of the significant contributors of mental health for mokopuna they are able to better understand the needs of their pēpi.

> "I feel I am his comfort"

> "He has distinct cries, usually wants to be held or a bottle"

Māmā continued to identify themselves as main sources of comfort for pēpi, reflecting a deep understanding of the emotional and physical needs of their mokopuna. This highlights the role Māmā play in not only comforting their pēpi but also in fostering the foundations of mental health from an early age. The act of providing comfort is much more than just physical caregiving—it is also a form of emotional reassurance that shapes a pēpi's attachment style. Understanding their role in this process allows Māmā to tune into their pēpi's cues with more sensitivity, which can have long-term positive effects on their child's social-emotional development (Wilkinson et al., 2022).

The awareness of the influence of Māmā-pēpi attachment can strengthen the bond between the two, as Māmā are able to recognise their importance in establishing safe and secure attachments for pēpi and in mitigating mokopuna mental health. Secure attachments formed in infancy are crucial in building emotional resilience and coping mechanisms later in life (McGarvie, 2024). By recognizing their influence on their mokopuna's mental health, Māmā not only gain confidence in their caregiving but also feel empowered to respond to their pēpi's needs with greater understanding and empathy. This is important because the connection between Māmā and pēpi lays the groundwork for a secure attachment system that can extend to all future relationships,

underscoring the importance of this early bond in shaping mental health (McGarvie, 2024).

Insight #5

The health of Māmā-Pāpā relationships and the role of Pāpā has significant impact on maternal perinatal stress.

> "He was by my side the whole time, it meant I didn't have to lean on my mum as much."
>
> "Pāpā was pretty useless, I feel like it went smoother [because he wasn't there]"

Māmā identify Pāpā both as main supports *and* as main stressors. The relationship between Māmā and Pāpā can either have detrimental impacts on Māmā mental health and heighten perinatal stress or Pāpā can be a source of comfort for distressed Māmā, alleviating worries and regulating emotions. When Pāpā is present and engaged, Māmā often feel more supported, which can alleviate stress and enhance mental well-being. On the other hand, when Pāpā is less involved or perceived as unhelpful, Māmā may experience heightened stress and additional emotional burden.

Not only does Pāpā have an impact on Māmā perinatal stress, Pāpā are also main contributors to attachment styles of pepī. Pāpā's involvement in the early stages of parenthood is linked to the attachment styles of the child (Alio et al., 2013). Secure and consistent awhi from Pāpā can foster more emotional stability for pēpi, contributing to healthier emotional and social development (Alio et al., 2013). Conversely, disengagement or conflict between Māmā and Pāpā can affect the child's attachment and emotional regulation, which can have lasting effects on their well-being (Alio et al., 2013).

Understanding the role of Pāpā during these times helps Pāpā to better fulfill these roles and support Māmā and pepī. By fostering an environment where Pāpā feels empowered and equipped to contribute positively, both Māmā's stress and pepī's developmental outcomes can be better supported. Engaging Pāpā in meaningful ways—whether through education, emotional support, or practical assistance—helps ensure that both Māmā and Pāpā are able to fulfill

their roles in ways that promote healthier, more balanced whānau dynamics during this critical time.

Insight #6

Māmā emphasised the importance of having access to the *appropriate* support and information when experiencing anxiety, depression, and other mental health stressors that we know are common during the perinatal period.

> "Don't be shy to take, ask, be open to any advice or support"
>
> "I wish I knew what I know now when I had my eldest"
>
> "I struggled with how Western healthcare intrudes on my cultural upbringing"
>
> "I was in Tamariki Ora but the nurse started asking invasive questions and I started to feel weird so I changed to Plunket"

Māmā deserve to feel sufficiently supported during their hapūtanga. Māmā who reported feeling supported were more likely to express confidence in managing the ups and downs of hapūtanga. Support that acknowledges Māmā as individuals, provides safe spaces to ask questions, and respects the individual's journey creates an environment where Māmā feel empowered, this is also why Māmā often seek whānau or their close community for support during hapūtanga. When Māmā feel seen and understood, they are better able to cope with mental health stressors and maintain emotional wellbeing during this challenging time.

Māmā also reported culturally incompetent spaces as contributors to perinatal stress, highlighting the need for culturally competent spaces as well. The feedback shared by Māmā about experiences with culturally incompetent spaces underscores a significant issue. This further emphasises that 'appropriate' services are not sufficient on their own. Services must also be culturally safe, meaning they must take into account the values, beliefs, and unique needs of Māmā, creating an environment where they can feel comfortable and supported throughout their hapūtanga journey.

He tapu te whare tangata — Looking after our Māmā

Intergenerational Disadvantage

Intergenerational disadvantage or trauma is a direct result of colonisation with the loss of mātauranga, tikanga, Te Reo Māori and whenua are all contributory factors to the high rates of Māori across all negative statistics in Aotearoa (Royal Commission of Inquiry, 2025). This cycle is perpetuated by victims of the cycle, evident in the high number of tamariki from state care ending up in juvenile detention or prison (Tahana, 2022.

For many centuries prior to colonisation, indigenous communities across the globe are renowned for approaching pregnancy and child-rearing with collaboration and involvement from many members in the whānau and wider community. The common phrase, ***"It takes a village to raise a child,"*** accurately reflects the way indigenous communities and, in particular, tangata Māori raise our mokopuna (Healthy Families, 2023). Wahine Māori were revered and held to the highest form of tapu because of their ability to bring forth our next generations (Higgins, 2011). This was evident in the complexities of our birthing practices and the sacredness that surround a hapūtanga journey. For hapū Māmā, the loss of tūpuna practices meant a shift from kaupapa Māori, whānau centred hapūtanga education and support to mainstream, Western model of healthcare, isolating Māmā from the culturally competent spaces they deserve (Walker, 2022). This meant that trauma and stress has been easily passed down through generations, becoming increasingly more concerning with each transmission.

Insight #7 — *The Vision*

Māmā want to break the cycle of intergenerational stress, supporting their mokopuna to live healthy, happy and thriving lives.

> "I feel [my childhood] has built the person I am today, however I know others in my whānau have been affected negatively by our upbringing"
>
> "I hope my tamariki grow healthy, confident, strong and thriving in the world"
>
> "I don't want them to live the same lives as us"

"Healthy eating, healthy life"

"I hope my kids beat the mental health history in our whānau"

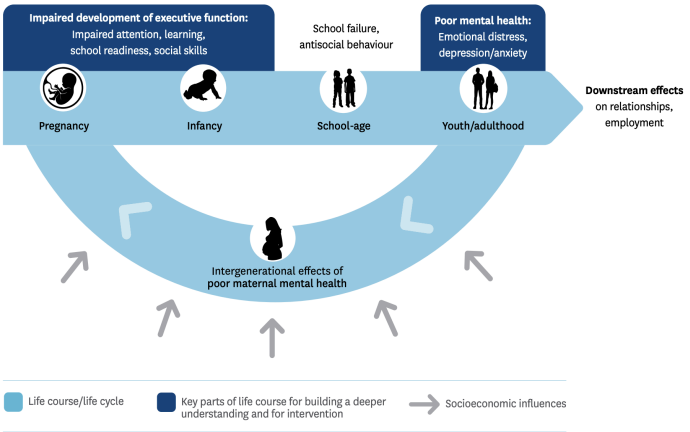
Perinatal stress and attachment play a critical role in either perpetuating or breaking the cycle of intergenerational trauma. Addressing stress and fostering secure attachment between Māmā and pēpi are key to reducing the transmission of trauma and building resilience in future generations.

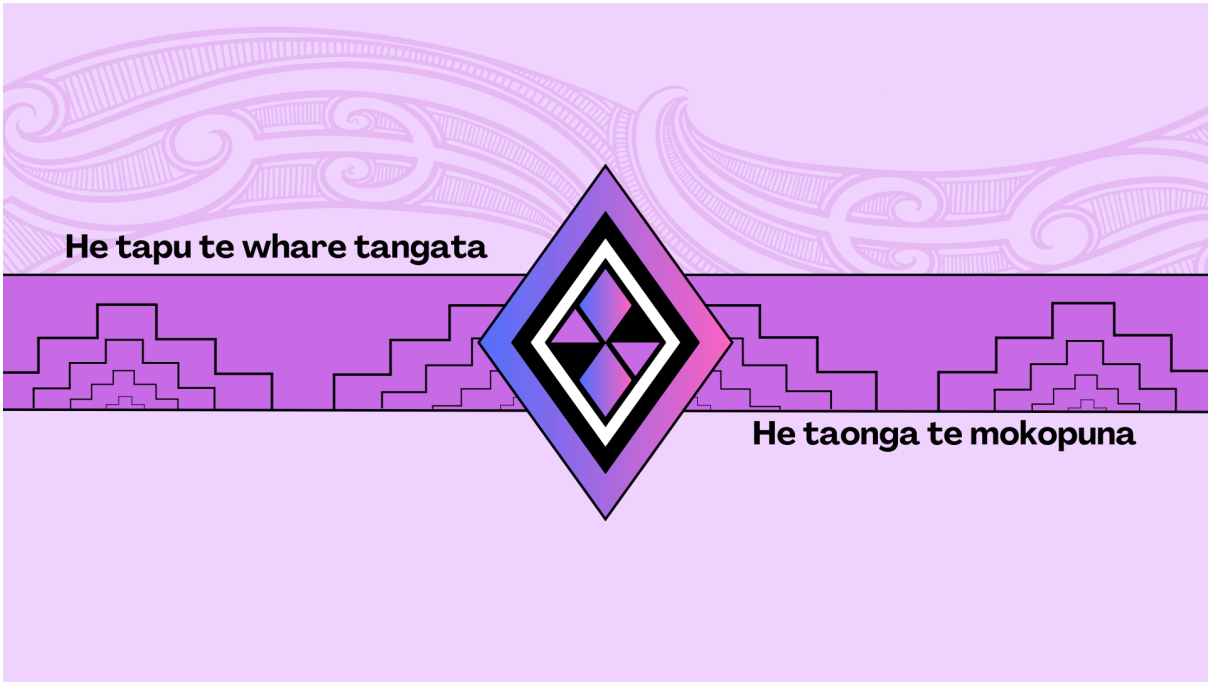
Māmā want the best for their pēpi, and by supporting their well-being through culturally safe, accessible interventions, we can help create healthier whānau and stronger foundations for tamariki to thrive emotionally and socially.

Tohu / Framework

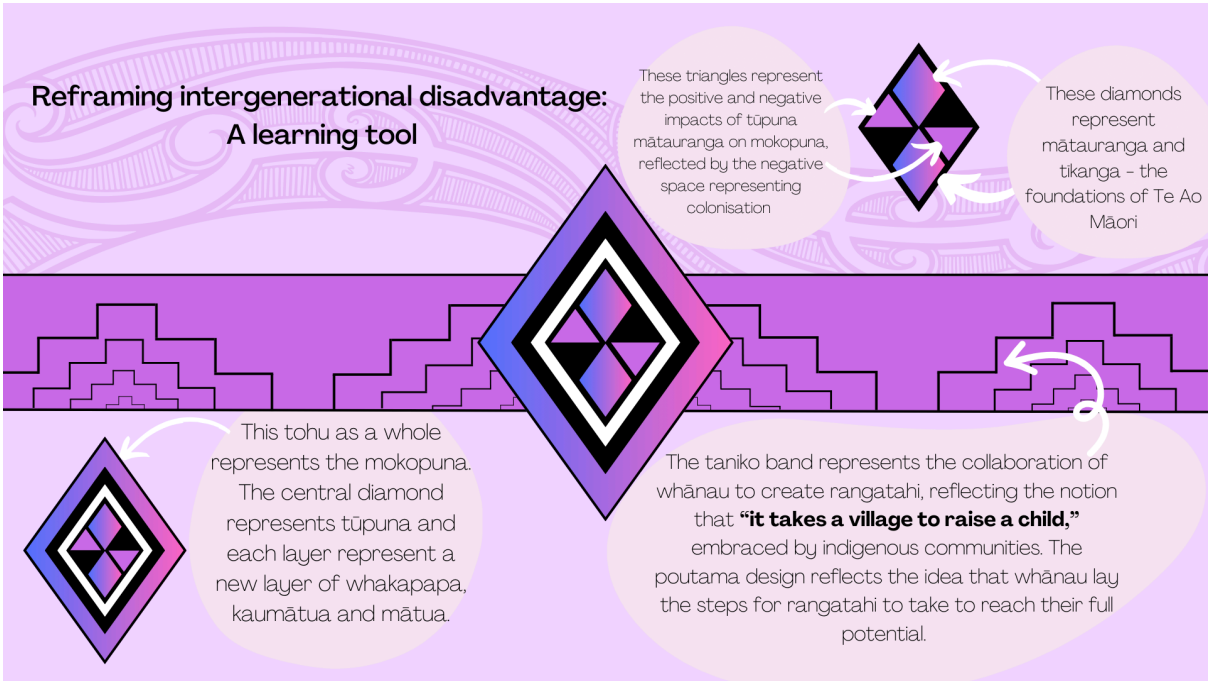
Previous narratives of intergenerational trauma were framed around deficit outcomes and often lead to feelings of negativity, shame and the perpetuation of stereotypes (Ream. 2023). For Māmā, this can heighten perinatal stress by implying that Māmā are perpetuating cycles of intergenerational disadvantage, where in actual fact, it is a complex interplay of biological, social and systemic inequalities as a result of colonisation that causes this cycle. By including intergenerational trauma as a part of the taonga passed on from our tūpuna, it becomes a learning tool to recognising and understanding health disparities including mental health.

Examples of deficit focused frameworks





This framework was designed to be a tool for reframing our understanding of intergenerational disadvantage, in order to understand and recognise the transmission of mental health through generations.



The central most diamond represents our tūpuna. Within our tūpuna layer, there are two diamonds and two triangles. The two diamonds represent mātauranga and tikanga—the foundations of Te Ao Māori—being passed down through generations. The triangles represent the impacts of tūpuna mātauranga on our mokopuna, conversely the negative space reflects colonisation and the drastic impacts that had on our tūpuna. The directions of these tohu represent the cyclical nature of mātauranga and tikanga as well as intergenerational trauma and inequity. This reinforces that our tūpuna not only passed on significant mātauranga but also intergenerational disadvantage as a result of colonisation.

Subsequently, our kaumātua act as the main kaitiaki for whānau and directly influencing mātua. Even in pre-colonial times, kaumātua were integral to the functioning of Māori society, responsible for growing their mokopuna into flourishing rangatahi (Berryman et al., 2024). Since the attempted mātauranga erasure, our culture has been thriving, however, the impacts of intergenerational trauma and systematic inequalities are still inherent. Te tae mā highlights the intergenerational passage of colonial trauma from our tūpuna to our kaumātua of the 'lost generation' to our mātua.

The next layer represents our mātua, the primary route of knowledge from our past to our future generations. This tohu reflects that the makeup of mātua—their history, their background, their ethnicity, their whānau—influences mokopuna outcomes. The colour pango represents the kore in which our mokopuna form—te whare tangata.

This central diamond figure or *waharua kōpito,* literally means, ***"a point where people or events cross."*** This reflects the idea that each layer has a significant impact on the next but also the transition through each generation creates an environment for change and evolution as well as opportunity for collaboration and collective growth. Mokopuna comes from two words; moko meaning to tattoo or trademark and puna meaning pool or reflection. With this narrative, mokopuna are physical manifestations of whakapapa 'blueprints' all the way back to Hawaiki—***"the pool of tūpuna trademarks"***. Not only do our mokopuna literally reflect individuals of the past, they are the puna created from generations of mātauranga and tīkanga—a mirror into the past.

The taniko band that surrounds our waharua kōpito represents the whānau and community that surrounds each and every mokopuna. Māori, like many other indigenous communities, pioneered, ***"it takes a village to raise a child,"*** approaches to maternity and parenting practices. The poutama within it represent the laying down of knowledge from whānau and communities, creating the next step for our mokopuna to reach their full potential as rangatahi.

This tohu, as a whole, represents rangatahi. The waharua represents the mokopuna, purely affected by social and biological inheritance. The poutama represent the whānau, community and supports that create rangatahi from mokopuna, using the puna of mātauranga from each generation. This tohu is designed to represent the intergenerational transmission of mātauranga, tikanga, trauma and disadvantage but framing it with focus on strengthening mokopuna and rangatahi outcomes.

Recommendations

Diminishing intergenerational disadvantage requires targeting the root of systemic inequalities in order to whakapiki the health of those that bring our next generation into the world. Embracing the whakataukī, “he tapu te whare tangata,” ensures that Māmā are the focal point for decreasing the transmission of intergenerational trauma. Utilising the above framework to help Māmā understand and acknowledge intergenerational trauma can be a way for Māmā to recognise how to break that cycle for their own whānau.

Supporting Hapū Māmā Investments

Hapū Māmā Wānanga aproach to antenatal education

The Hapūtanga Wānanga approach provides a culturally grounded and holistic framework for addressing perinatal stress, fostering healthy relationships, and strengthening support systems for Māmā. By integrating mātauranga and tīkanga Māori into antenatal education, this approach ensures that Māmā receive well-rounded, culturally appropriate care that reflects their values and whakapapa. Expanding this approach could include providing practical tools for stress management, fostering strong whānau connections, and offering guidance on healthy attachment practices. Additionally, Hapūtanga Wānanga should continue to incorporate community-driven initiatives to empower Māmā with the confidence and knowledge to navigate the challenges of pregnancy, birth, and parenthood in a way that uplifts their holistic well-being and that of their pēpi.

Co-location of services in Te Whare Piringa prototype

Ongoing investment in the co-location of maternal health services within the Te Whare Piringa prototype is essential to creating an integrated and accessible care model for Māmā and their whānau. This prototype emphasizes a wraparound approach that brings together physical, emotional, and cultural health services under one roof, streamlining access to care and reducing barriers. Expanding this model to include maternal mental health services would provide seamless support for Māmā experiencing perinatal stress, anxiety, or depression. It would also ensure that mental health care is treated as an integral part of maternal well-being, rather than as a separate or secondary concern. In 2022, the Helen Clark Foundation produced a report that proposed better

perinatal mental health care being profoundly beneficial to the collective wellbeing of whānau in Aotearoa. In particular, perinatal mental health care that targets whānau wellbeing as a strategy to whakapiki māmā (Walker, 2022). By fostering collaboration between mental health professionals, midwives, and other health practitioners, the Te Whare Piringa prototype can serve as a beacon of holistic care and equity in maternal health.

Building whānau and community resilience

To effectively address perinatal stress and strengthen attachment, it is vital to widen the scope of efforts to build community resilience. Developing the capability of communities to provide support for Māmā involves fostering networks of care, including peer support groups, culturally aligned mentoring programs, and accessible community resources. Initiatives could focus on educating whānau and community leaders about the impacts of perinatal stress, equipping them with the skills to offer early intervention, and promoting a collective responsibility for maternal well-being. By cultivating environments where Māmā feel supported and understood, we can empower communities to act as proactive buffers against the effects of stress, ultimately enhancing the well-being of both Māmā and pēpi. Supporting community resilience not only addresses immediate challenges but also creates lasting systems of care that strengthen generations to come.

Streamlining services

Increasing accessibility

To enhance the effectiveness and accessibility of maternal mental health care, there is a pressing need to streamline services across all levels of care. This involves creating clear, coordinated pathways between community, primary, and secondary care services, ensuring Māmā can seamlessly access the support they need without unnecessary delays or confusion. Streamlining should also focus on integrating cultural and clinical care models, and addressing gaps in care to provide a smoother and more efficient experience for Māmā and their whānau. With the rise of social media and increased use of digitalised resources, utilising and improving digital health platforms and centralised communication systems can further foster seamless continuity of care as well as improve communication of important information between providers.

Smoother referral processes

Efficient referral processes are essential for ensuring that Māmā receive timely and appropriate maternal mental health care. There is an urgent need to enhance referral pathways between secondary and primary services, ensuring a more coordinated and patient-centered approach. Improvements could include developing standardized referral criteria, fostering stronger relationships between healthcare providers at different levels, and implementing referral tracking systems to reduce bottlenecks and follow-up delays. Culturally safe and whānau-centered practices must be integrated into these processes to ensure equitable access to care, particularly for wāhine Māori, Pasifika, and other underserved groups. A more streamlined referral process will not only improve access but also ensure continuity of care, reducing the risk of Māmā falling through the cracks.

Improving cultural competency

Addressing perinatal stress and improving outcomes for Māmā requires a well-supported, diverse, and adequately trained workforce. A key component of this involves building workforce capability and expanding capacity by incorporating holistic kaimahi as well as peer support kaimahi to play a vital role in perinatal stress education and support. These kaimahi could deliver culturally informed antenatal education, provide emotional and practical support to Māmā, and act as navigators within the health system. By focusing on relational, whānau-centered care, kaimahi can fill critical gaps in the current system, ensuring that Māmā feel seen, heard, and supported. Investment in their training and professional development will further strengthen the workforce and provide valuable community-driven solutions to maternal mental health challenges.

Further research

Further research into the role of Pāpā before, during, and after hapūtanga is essential to fully understand and highlight their critical influence on mokopuna outcomes. Pāpā play a foundational role not only as caregivers but also as key contributors to the emotional, social, and cultural well-being of both Māmā and pēpi. Exploring how Pāpā can provide emotional support during hapūtanga, foster strong Māmā-Pāpā relationships, and actively participate in child-rearing

will offer valuable insights into strengthening whānau resilience and improving intergenerational outcomes.

This research should also emphasize the impact of Pāpā involvement on Māmā's mental health and stress levels during pregnancy, as positive Māmā-Pāpā relationships are shown to reduce perinatal stress and improve overall whānau dynamics. By identifying barriers to active paternal involvement, particularly for Māori and Pasifika Pāpā, and exploring culturally aligned strategies to overcome these challenges, we can ensure that Pāpā are empowered to play an active, meaningful role in whānau well-being.

The findings from this research could inform the development of targeted educational programs, antenatal support initiatives, and policy changes that actively involve Pāpā as equal partners in hapūtanga and parenting. Recognizing and strengthening the role of Pāpā is a vital step toward achieving better health, developmental, and social outcomes for mokopuna and their whānau.

Summary

Stress is a universal experience that ranges from daily hassles to severe trauma. It operates in three phases: alarm, resistance and exhaustion—which use a combination of hormones to regulate the body, namely cortisol. Perinatal stress, experienced by Māmā during hapūtanga, occurs due to a combination of physiological, social and environmental pressures which disproportionately affects Māmā Māori and Māmā in high deprivation. Elevated cortisol levels can harm placental function and pēpi development, contributing to issues like low birth weight, mental health challenges, and insecure attachment styles. Aotearoa's maternal suicide rate, six times higher than the UK's, further underscores the urgent need to address these issues, particularly for wāhine Māori, who face significantly higher risks. Perinatal stress not only impacts Māmā but also perpetuates intergenerational trauma, affecting mokopuna outcomes and whānau well-being.

The impacts of perinatal stress are compounded by systemic factors such as trauma, socioeconomic disparities, and substance addiction. Colonization has eroded traditional Māori values and practices, disconnecting hapū Māmā from culturally safe care and collective whānau support. Adolescent pregnancy, poverty, intimate partner violence, and addiction further heighten stress and worsen outcomes for both Māmā and pēpi.

Addressing these interconnected challenges requires culturally safe, whānau-centered interventions that promote secure attachment, empower Māmā, and strengthen community resilience. Additionally, improving maternal health care systems, integrating holistic kaimahi, and enhancing referral processes will ensure equitable access to support. Research into the role of Pāpā during hapūtanga is also essential, as their involvement can strengthen Māmā-Pāpā relationships and improve mokopuna outcomes. By addressing perinatal stress and its underlying causes, we can break cycles of intergenerational trauma and create healthier futures for whānau in Aotearoa.

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