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Constructing Perimenopause: A Discursive Analysis of Diverse Women's Talk About Menstrual Tracking Apps in Aotearoa New Zealand

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Molly Alice Nicholson

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Abstract

Background

This thesis explored how perimenopause was constructed by diverse women in their talk about menstrual tracking apps (MTAs) in an Aotearoa/New Zealand context, and how these digital technologies shaped their experiences. Despite growing public attention on midlife experiences, perimenopause remains under-researched and is dominantly framed through reductionist biomedical frameworks. In addition, the use of MTAs to monitor, track, manage, and interpret our bodies has substantially increased. This raises important questions regarding how MTAs intersect with the socially constructed experiences of perimenopause.

Method

Adopting a qualitative, participatory approach, this study utilised cooperative inquiry methodology to position participants as active contributors to knowledge production. Twenty-four perimenopausal women came together over several weeks to discuss their use of MTAs and engage in reflective activities. Data were analysed using a Foucauldian discourse analysis (FDA), attending to how language constructs meanings of perimenopause and shapes positionality.

Results

The five main intersecting discourses that participants drew on were labelled the biomedical, natural, neoliberal, 'forever young', and taboo discourses. MTAs were found to reinforce and reproduce these discourses, shaping the participants' experiences. Participants drew on the biomedical discourse to construct perimenopause as a medical condition, involving symptoms, medical interactions, hormones, and treatment. The natural discourse framed perimenopause as a normal stage of aging. The neoliberal discourse constructed perimenopause as a self-managed experience, positioning perimenopausal women as personally responsible for monitoring, optimising and improving their bodies. Additionally, the 'forever young'

discourse framed perimenopause as a loss of femininity, youth, and reproductive functioning, while the taboo discourse contributed to the silencing of perimenopausal women.

Conclusion

This study contributed to the existing literature by demonstrating that perimenopause cannot be reduced to a simple biological experience but is a complex, socially constructed experience. Additionally, this study showed that MTAs are not a neutral tool but actively shape how perimenopause is understood and experienced. It highlighted the importance of understanding the intersection of midlife experiences and digital technologies. The findings have implications for MTA use and women's health, highlighting the need for further research with diverse and marginalised identities and different cultural contexts to better support women's experiences, health, and wellbeing.

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Chapter 1 – Perimenopause

The Current Research Project

This research project explored women's experiences of perimenopause and their use of Menstrual Tracking Apps (MTAs), focusing on the discourses that shape how women perceive perimenopause and their engagement with MTAs. Gaining a deeper understanding of the experience of perimenopause, menopause, and post-menopause should be a priority, as women spend a significant portion of their lives in these life stages. There has been limited research on perimenopause, despite it being a universal experience. Perimenopause is a topic often not openly discussed socially, as it is understood to be taboo and shameful. Taboo and shame are connected to many reproductive processes and conditions that women experience. The volume of research on perimenopause has grown substantially in the past decade. However, there is still a long way to go.

The current research project took a qualitative approach, as ensuring women's voices are heard is essential for improving health outcomes, and the understanding, awareness, and treatment of perimenopause (Richard-Davis et al., 2022). While there is a growing body of literature on menopause, less is understood about perimenopause. Although perimenopause and menopause are classified as two different stages of reproductive ageing, throughout the literature, and less formally, the two stages are often referred to interchangeably. Usually, it is not black and white as to whether perimenopause or menopause is being referred to or experienced, with there being much overlap in the presentation of these two stages of reproductive ageing. Many women claim they are in 'menopause' when they reach midlife.

Throughout this research project, the reference to women or perimenopausal women is used to discuss topics, themes and discourses surrounding perimenopause, menstruation and MTAs. However, it is important to acknowledge that not all women are menstruators and not all who menstruate are women. Individuals who have not yet reached adulthood, such as

children and teenagers, or those who are transgender or no longer identify with being a woman, may also menstruate (Felsberger, 2025). Additionally, cisgender women may not menstruate due to amenorrhea (no longer getting a menstrual period), menopause, or a hysterectomy (Felsberger, 2025). In this research project, the term 'women' refers to individuals who were assigned female at birth.

Perimenopause

Defining Perimenopause

Perimenopause can be defined and referred to in various ways, depending on who provides the definition and the background from which they come. Perimenopausal terminology has evolved. Initially, perimenopause was labelled the 'climacteric' phase by the World Health Organisation (WHO), and later came to be referred to as 'perimenopause' or the 'menopause transition' (Hale & Burger, 2009). In this research project, 'perimenopause' is used to encompass the terms 'climacteric' and 'the menopause transition'.

WHO (2024) defines the biomedical definition of perimenopause as clinical, endocrinological and biological changes that gradually occur before menopause. Menstrual irregularities are a key aspect of these changes, which women may, on average, begin to experience between 47 and 48 years old, said McNamara and colleagues (2015). Menstrual cycles become more unpredictable due to an increased number of anovulatory cycles (menstrual cycles in which ovulation has not occurred), fewer eggs available to ovulate, and hormonal pattern changes (Meyers et al., 2023; Santoro et al., 2021). Medically speaking, women are considered to be perimenopausal when Follicle-Stimulating Hormone (FSH) levels are greater than 30mIU/mL (McVeigh, 2005).

Perimenopause can be separated into an early and late menopausal transition phase, correlating to hormonal changes (Santoro et al., 2021). Karaflou and Goulis (2024) noted that during the early menopause transition, there is potential for variation in menstrual cycle length. Menstrual cycle length may vary by more than seven days for consecutive cycles, relative to

the average 28-day cycle. In the late menopause transition, women could expect amenorrhea, otherwise known as the lack of a menstrual period for sixty days or more (Ambikairajah et al., 2022).

Classifying Perimenopause

Previously, substantial ambiguity and confusion surrounded the reproductive ageing process for women; therefore, a classification system was developed. Hale and colleagues (2014) summarised the 'Stages of Reproductive Ageing Workshop' (STRAW) held by WHO in 2001 and 2011. These workshops led to the development of a practical staging system, which was initially labelled the STRAW criteria (Hale et al., 2014). Now known as the STRAW+10 criteria, a worldwide-recognised framework in research and clinical environments (Hale et al., 2014). The framework contains seven distinct stages, with the early perimenopause phase associated with stage -2 and the late perimenopause with stage -1 (Ambikairajah et al., 2022).

Symptoms of Perimenopause

As women enter perimenopause, it is not uncommon for symptoms to arise resulting from physiological changes and fluctuating hormones. Osman et al. (2023) stated that women may experience none, few or many symptoms; this varies greatly, with some women experiencing milder symptoms with minimal pain, and others experiencing more severe and painful symptoms. It is estimated that only 20% of women reach menopause without experiencing notable symptoms or needing to receive medical attention (McHugh et al., 2024). According to the Australasian Menopause Society (2023), perimenopausal symptoms arise due to both excessive oestrogen and oestrogen deficiency. Women experiencing breast pain, headaches and heavy menstrual periods may have too much oestrogen (Australasian Menopause Society, 2023). On the other hand, Vasomotor Symptoms (VMSs) are due to too little oestrogen (Australasian Menopause Society, 2023).

VMSs can emerge from both physical and psychological manifestations, including night sweats and hot flashes (Khalil & Bishop, 2024; Osman et al., 2023). Khalil and Bishop described VMSs as acute-onset warmth that flushes the upper body, including the neck, chest, and face. Hot flashes occur during the day, and night sweats happen during the night (Khalil & Bishop, 2024). Hot flashes and night sweats can vary in intensity, lasting between one and five minutes, and may be accompanied by sweating, heart palpitations, anxiety, and chills (Khalil & Bishop, 2024).

Other symptoms associated with perimenopause include weight gain, sleep disturbances, depressed mood, joint and muscular aches, memory impairments, and sexual dysfunctions (Musial et al., 2021; Osman et al., 2023). Chen et al. (2023) provided a summary of the autonomic disorders and long-term symptoms that can occur due to perimenopause. The occurrence of neurological symptoms among perimenopausal women is around 58%, with the highest proportions of these being low mood, irritability, insomnia, headaches, and a feeling of lack of interest and enthusiasm (Chen et al., 2023). Additionally, more than half of menopausal women will experience symptoms associated with the genitourinary system (due to hormone levels), said Chen and colleagues. These symptoms may include vaginal dryness, increased urinary tract infections, urgent urination, and recurrent vaginal infections due to thinning and inflammation of the vaginal wall (Chen et al., 2023).

These perimenopausal and menopausal symptoms described provide a basis for understanding the physiological and biological changes occurring in the body. However, it does not allow us to grasp the embodied experiences of these symptoms, which cannot be achieved by describing the symptoms alone. As I expand on the experiences of these symptoms, we will begin to understand how perimenopausal women's experiences are shaped by psychological, social, cultural, and political factors and interactions.

Hormones

The Role of Hormones in Perimenopausal Experiences

Many of the changes and symptoms that occur during perimenopause can be attributed to hormonal changes, which can be traced back to the menstrual cycle. Kurpanik et al. (2024) stated that four key hormones regulate the menstrual cycle. They argued that Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH) are secreted by the pituitary gland in the brain, and that oestrogen and progesterone are produced in both the ovaries and the brain. These four hormones are responsible for producing different bodily functions. They stated that oestrogen is responsible for rebuilding the membrane inside the uterus after menstruation, stimulating the secretion of FSH and LH, and positively affecting emotions and libido. Progesterone's role is to support the development and maintenance of a potential pregnancy, with levels increasing when fertilisation occurs (Kurpanik et al., 2024). Additionally, LH and FSH ensure that an egg is released at the time of ovulation (Kurpanik et al., 2024).

In the follicular phase of the menstrual cycle, oestrogen levels are high at the end of the menstrual period (Kurpanik et al., 2024). According to Kurpanik et al., during this phase, the brain's reward system is more reactive, and enhanced concentration, energy levels, and happiness are more common. When fertile, around ovulation or the middle of the menstrual cycle, women report more positive affect, which can be attributed to increased chances of conception and to higher oestradiol and progesterone levels that enhance sexual desire, said Stern and colleagues (2025). Additionally, around ovulation, changes in personality states have been reported, including increased extraversion and sociability (Stern et al., 2025). Negative affect is reportedly higher during the luteal phase due to fluctuating progesterone and Premenstrual syndrome (PMS) symptoms, including mood swings and irritability (Kurpanik et al., 2024).

The Biomedical Perspective

The description of perimenopause above aligns with the biomedical perspective, being reduced to a hormone deficiency disease, menstrual cycle changes, and fluctuating hormones (Hyde et al., 2010). The biomedical narrative positions perimenopause as something that is to be 'suffered', 'diseased' and 'abnormal', whereby women who are labelled as the 'sufferers' need medical treatment (Ussher et al., 2015). Lyons and Chamberlain (2006) argued that while the biomedical perspective is helpful to medicine, it is reductionistic and separates the physical body from psychological and social aspects. Despite often being negatively critiqued for its lack of consideration for non-biological factors, it has been crucial (Lyons & Chamberlain, 2006). Additionally, the biomedical perspective has been positively regarded in the development and understanding of health and disease (Lyons & Chamberlain, 2006).

Medicalisation

Medicalisation is tied to the biomedical perspective and is defined as the process by which a behaviour or condition forms medical meaning (Dillaway, 2008). Dillaway said that the concept of medicalisation is shown through perimenopause and menopause, as it is defined and often understood as a medical illness, having an associated set of symptoms and a course of treatment. Perimenopause being constructed as a medical condition is frequently portrayed in interactions with healthcare professionals and the media, flowing on to influence the beliefs, thoughts, experiences and conversations surrounding perimenopause in both personal and public areas (Dillaway, 2008). Biomedical information provided by medical professionals and media sources is often imposed on women, being presented as correct and the only truth (Hyde et al., 2010).

Perimenopause and menopause have not always been constructed as medical issues, previously being thought of as a natural life transition. Utz (2011) said that medicalisation is a result of societal norms, governmental organisations, and gendered social practices within

shifting cultures. Through the construction of perimenopause as a medical condition or deficiency disease, it is thought to be something requiring medical treatment and pharmaceutical interventions (Marnocha et al., 2011). There have also been other social and cultural influences that have contributed to the medicalisation of perimenopause and menopause, said Marnocha and colleagues, such as the gendered, undesirable negative construction of women's reproductive processes.

The Biomedical Model

In the field of psychology, the biomedical model has received substantial criticism for largely focusing on biological processes and failing to acknowledge the behavioural, psychological, and social aspects of both health and disease (Engel, 1977). When research on the experiences of perimenopause is conducted from a biomedical perspective, it means that crucial psychological and social aspects that make up the whole experience are ignored. Taking an approach that involves the psychological and social factors, such as understanding perimenopause through the biopsychosocial model, is crucial to ensure that perimenopausal women's experiences are analysed and discussed thoroughly.

Biopsychosocial Model

A framework that is better aligned with understanding the embodied experiences of perimenopause is the biopsychosocial model, offering a more holistic perspective on health and disease. Put simply, the biopsychosocial model is argued to consider the psychological and social aspects that the biomedical model fails to acknowledge (George & Engel, 1980). This model considers biological factors, including the experience of perimenopausal symptoms and hormonal changes, alongside the broader socio-cultural context. Psychological aspects of the model include factors such as emotions and personality, while social aspects involve factors such as support systems and relationships, community, socioeconomic status, and cultural perspectives (Gifford, 2016). Lugg (2022) stated that many report George Engel as the first to

propose the biopsychosocial model in 1977. However, the concept behind the model had been around for many years before 1977, with prior acknowledgement and attention paid to the spiritual components of human experience (Lugg, 2022).

The biopsychosocial model is said to offer a *new medical paradigm*, in which the embodied experiences of individuals are given greater consideration, and the model of causation encompasses a broader set of factors than the linear cause-and-effect biomedical model (Borrell-Carrió et al., 2004). Engel (1977) stated that when creating this new model, it had to take into account the patient, the social context, and the societal system in which the person lives to adequately address disease and illness. Within the biopsychosocial model, medical professionals should consider the many reasons an individual may seek medical help, as well as the social, psychological, and biological aspects of the presenting issue (Engel, 1977). This is relevant in understanding the experiences of perimenopause and menopause, as there may be more than purely biological considerations for why medical help is sought.

The biopsychosocial model is based on *systems theory*, which views natural systems as hierarchical and nested within broader biological, psychological, and sociocultural categories (Lugg, 2022). Related events are treated as a system in which all levels of organisation, such as "molecules, cells, organs, the organism, the person, the family, the society, or the biosphere," are interconnected, so that change at one level impacts all others (Engel, 1977, p. 134). Havelka et al. (2009) argued that, rather than disease being at the centre of the model, it is a system in which the three major subsystems (biological, psychological, and social) communicate with one another.

Engel created the biopsychosocial model in response to the three main aspects of medical care that he believed contributed most significantly to dehumanising practices (Borrell-Carrió et al., 2004). Borrell-Carrió and colleagues said that first, there was the rejection of Descartes' dualism (the separation of the body and mind), which was dominant in

the biomedical model. Without considering interactions between the body and mind, the whole individual cannot be accurately assessed. Secondly, Engel addressed the reductionistic and materialistic nature of the biomedical model (Borrell-Carrió et al., 2004). With the biomedical model, illnesses and diseases that could not be objectively measured or verified ceased to exist, and illness was treated independently from social behaviour (Borrell-Carrió et al., 2004; Engel, 1977). Thirdly, Engel sought to change the physician-patient relationship, shifting it from a stance of pure objectivity to one in which the physician creates a caring, thoughtful relationship with the patient (Borrell-Carrió et al., 2004). With the adoption of the biopsychosocial perspective, the biological, social and psychological aspects that construct the experiences of perimenopause could be considered. This was important, as otherwise these experiences would be reduced to bodily sensations and symptoms, and the experience of perimenopause is much more than this.

Perimenopausal Experiences

Lack of Knowledge, Awareness and Preparation

Perimenopause can come as a surprise to many women, with a significant number moving through the ageing stages with a large knowledge gap of what should be expected (Munn et al., 2022). Munn and colleagues (2022) said that knowledge of perimenopause and menopause arises more from friends and relatives than from formal education. Some women described not knowing when it is normal for perimenopause to begin (Coslov, 2022). It has been found that two-thirds of women at the age of 30, when asked what age they would expect perimenopause to begin, assumed the perimenopausal stage would start after the age of 50 (Coslov, 2022). Harper and colleagues (2022) explained that when perimenopausal symptoms arise for women, feelings of surprise, confusion, and anger are common. These feelings are due to the lack of education and awareness regarding what symptoms should be expected when arriving at the perimenopausal life stage (Harper et al., 2022).

The socially constructed perceptions of perimenopause that circulate in the media, conversation, and social environments create barriers to women gaining knowledge of perimenopause (Wood et al., 2025). These barriers are a greater issue for women in some parts of the world than in others. Lycke and Brorsson (2023) described the lack of awareness and knowledge around the large number of symptoms that can be linked to perimenopause, stating that women aged between 45 and 49 described their knowledge as being inadequate. These women held basic knowledge, linking irregular menstruation, night sweats and hot flushes to perimenopause (Lycke & Brorsson, 2023). However, they were unaware that other symptoms experienced, such as sleep troubles, mood changes and heart palpitations, are also linked to perimenopause (Lycke & Brorsson, 2023).

The lack of knowledge and awareness of perimenopause may stem from low health literacy or living in an area where women's health is not prioritised in funding and government policies (Wood et al., 2025). Or, it may stem from the previously discussed stigma and taboo of perimenopause, where women are silenced and made to believe that perimenopause is not a topic that should be discussed privately or socially (Wood et al., 2025). As a result of this, Harper and colleagues (2022) found that some women described feeling unprepared for the unpredictable changes of perimenopause, inducing intense feelings of grief and loss for the end of their reproductive lives.

Additionally, there is a lack of information, education and open discussions surrounding the topic of sexual health (Simić Stanojević et al., 2024). Women reach perimenopause with minimal previous knowledge as to the biological, psychological, and social challenges they may come across (Simić Stanojević et al., 2024). Simić Stanojević and colleagues said that women would prefer to be more informed before reaching perimenopause, and that there is a missed opportunity for proactive or preventative healthcare measures and initiatives surrounding perimenopause.

Interactions with Healthcare Professionals

A theme that was prominent and recurring throughout the literature was around perimenopausal women's interactions with healthcare professionals. The repetition of these findings stems again from the biomedical perspective, with researchers commonly looking at the experience of perimenopause through this lens. However, women's interactions with healthcare professionals are an important aspect to discuss, as this was a strong discussion point for women when talking about their experiences of perimenopause.

Many women have expressed their challenges with the healthcare system, with their concerns often being dismissed and discredited (McHugh et al., 2024). Richardson et al. (2023) conducted a study on women's experiences with healthcare professionals, finding that women felt positively about their interactions when their feelings were validated. Validation from healthcare professionals was described as feeling heard and receiving empathetic support (Richardson et al., 2023). Additionally, contributing to a positive interaction included being supported by a team of medical professionals, being involved in the decision-making process regarding treatment options, and having their troubling symptoms addressed, said Richardson and colleagues.

On the other hand, Richardson and colleagues (2023) said that invalidation of concerns, emotions, and symptoms was a key contributor to negative interactions between perimenopausal women and healthcare professionals. Negative interactions were described as the dismissal of the adverse impact perimenopause has on some women's lives and their expectations not being met (Richardson et al., 2023). Healthcare professionals would disregard women, making statements such as perimenopause is just a part of life and women need to figure out how to deal with their new normal (Richardson et al., 2023). Additionally, Richardson et al. have highlighted how medical professionals in some circumstances would provide information on perimenopause that is inadequate, inaccurate, or conflicts with the

patient's views or understanding of perimenopause. As a result of these negative interactions, women are forced to seek information on their own, finding knowledge through community groups, the internet, social media, books, and podcasts (Lycke & Brorsson, 2023).

Simić Stanojević et al. (2024) highlighted the need for better support and treatment options. Women described their interactions with healthcare professionals as lacking the emotional support, empathy, and compassion they had hoped to receive, Simić Stanojević and colleagues reported. Women commonly reported hearing statements such as 'you just have to hang on, and get through it' or 'everyone has to go through this' in response to their concerns and distress, which were dismissed (Simić Stanojević et al., 2024). Additionally, when menopause concerns were not initially brought up by their healthcare provider, women expressed feelings of hesitation with being the first one to bring up their concerns (Alspaugh et al., 2021).

Confronting Emotions

Perimenopausal women reported feeling out of control of their emotions, mood and affect (Wood et al., 2025). Some said they were grumpier, less polite and less understanding of others in their daily interactions, stated Wood and colleagues. The reduced control over their emotions and moods led the women to lash out and lose their temper unexpectedly, harming their relationships with colleagues, friends and family (Wood et al., 2025). A sense of little control over one's emotions can arise from internal conflict, as described by Refaei et al. (2022), where contrasting feelings of fear and hope coexist. The rapidly changing biological, psychological and social environment can evoke strong feelings of uncertainty and fear about ageing (Refaei et al., 2022). Women reported feelings of anxiety with the perimenopausal changes, and worried as to whether the negative outcomes of perimenopause were going to remain stable or worsen as they moved into menopause (Refaei et al., 2022).

Loss of Womanhood

The biological changes of perimenopause, such as loss of menses (menstrual period), are closely tied to perceptions of a loss of womanhood (Jurgenson et al., 2014). Many women reported experiencing feelings of loss or grief over their lost reproductive ability and the possibility of having more children (Jurgenson et al., 2014). Feminist researchers have described perimenopause as a loss of youth or loss of femininity, whereby women are no longer able to fit into this young and fertile ideal (Prior, 2006). Singer and Hunter (1999) said masculinity remains relatively steady over the lifespan, in comparison to femininity, which is strongly linked to youthfulness and reproductive potential. This link between femininity and youthfulness influences women's experiences of perimenopause, as many women are argued to base their self-worth on attractiveness, femininity, reproductive potential and motherhood (Singer & Hunter, 1999).

Self-Perception and Identity

Women going through a significant life change, like perimenopause, may struggle with knowing who they are, their self-perception and identity. A lot of this uncertainty reflects the biological changes and symptoms that occur during the perimenopausal period. It can also be due to the social and emotional aspects that make up the perimenopausal experience (Singer & Hunter, 1999). These perimenopause-related changes can arise quite abruptly and result in women feeling as though they have lost their identity and the person they were before perimenopause, said Singer and Hunter. The bodily changes occurring during this stage may negatively impact some perimenopausal women's self-confidence and body perception (Cronin et al., 2021). Women may struggle to grapple with their two different identities, the younger version and the perimenopausal one (Cronin et al., 2021).

Many women, particularly those who are mothers, struggle with the idea that they are no longer in their reproductive years and are unable to produce children (Atwood et al., 2008).

There is a lot of meaning attached to the loss of menstruation, particularly with the realisation that they no longer have the ability to reproduce (Singer & Hunter, 1999). Singer and Hunter (1999) said that menopause is a socially constructed concept, shaped to be a process that is unproductive and unfeminine. Women have described perimenopause and menopause as a catastrophic event that forces these women to redefine the person they truly are (Singer & Hunter, 1999).

A significant proportion of the perimenopausal literature highlights the experience of perimenopause as negatively impacting self-perception and identity (Atwood et al., 2008; Cronin et al., 2021; Singer & Hunter, 1999). However, Sergeant and Rizq (2017) described how the significant life change of perimenopause can result in a positive re-evaluation of women's current identity. Through the dismissal of negative socially constructed narratives of perimenopause, women noted the ability to review their current life position and what they wanted to achieve moving into the future (Sergeant & Rizq, 2017). Some women described their experience of perimenopause as empowering and freedom-enhancing, removing the responsibilities of being a menstruator and the fertile or reproductive role they have held for their entire adult lives (Alspaugh et al., 2021; Wood et al., 2025). Wood and colleagues said perimenopause is experienced by some women as a personal transformation, making room for different or renewed relationships, a new role within the family, new interests and hobbies and more passionate spiritual connections.

Stigma

Defined as a *mark of disgrace* that sets an individual or group of people apart due to their circumstances or characteristics (Ray et al., 2023), stigma is a predominant reason why women's experiences of perimenopause have not been a research focus in the past. Ray and colleagues reported how, although menstruation happens to around 50% of the population, some cultures understand it to be dirty and shameful, resulting in stigma. This dirty and

shameful understanding is seen in the strict rules that are enforced in parts of the world, where women have to remain in isolation, are not to share places of worship with men, or be involved in food preparation while menstruating (Ray et al., 2023). These strict rules reinforce the idea that women's reproductive systems and bodies are something that should be controlled and hidden (Ray et al., 2023). Stigma and taboo are also associated with perimenopause, creating experiences of shame and embarrassment for something that is a normal ageing process. Orgad and Rottenberg (2024) said that the silencing of perimenopause is linked to the way the ageing woman is portrayed as invisible. Shame is the feeling that women reported when talking about their experiences of perimenopause (Singer & Hunter, 1999).

Women with similar lived experiences support one another through shared understanding. Hayfield et al. (2024) said that women resist silencing by forming 'sisterhoods' in which women with shared experiences come together to support each other. However, despite the 'sisterhood' movement, many women still feel uncomfortable discussing the topic of perimenopause, needing someone more confident to break the silence and probe with questions (Hayfield et al., 2024). Hayfield et al. (2024) stated that the sisterhood movement creates social spaces where women can reduce the pervasive unawareness of perimenopause, helping them to validate one another's experiences. They observed that perimenopausal women valued menopause cafés, allowing people from diverse backgrounds to network and discuss changes occurring physically, psychologically, and socially. These cafés first began in Scotland, attracting significant local and national interest, and now run regularly throughout the United Kingdom and online (Menopause Cafe, n.d.).

The 'Big' Change

Perimenopause is often described as a big change in a woman's life, being described in this way due to a significant shift. The shift involves changes to relationships, a woman's role within their family unit and in wider society, and status (Sergeant & Rizq, 2017). Many women,

while going through perimenopause, are also trying to juggle fatigue, work responsibilities, and caring for elderly parents (Wood et al., 2025). Wood and colleagues highlighted how women may also experience discrimination, otherwise described as ‘gendered ageism’, which is a result of the intersection of their gender and current life stage. Due to this change in social dynamics, many women report feeling invisible in society and no longer important members of the community, prompting some to socially withdraw (Anto et al., 2025).

Relationships

When entering perimenopause, a woman’s relationships may change with their partner, family members, friends and community. This is often due to a minimal understanding of the perimenopausal experience, as well as a lack of empathy. Hayfield and colleagues (2024) described how partner relationships can be profoundly affected by perimenopause and menopause. Women in happy and healthy marital relationships with minimal distress often reported being less negatively impacted by perimenopause, when compared to women in unhappy marital relationships with greater distress (Hayfield et al., 2024). The process of opening up and sharing individual health experiences with a partner can lead to a better connection and improved well-being (Dillaway, 2008). Dillaway said that women whose partners helped to comfort them and ease perimenopausal symptoms reported having a more positive experience.

Additionally, Dillaway (2008) highlighted how male partners often significantly lack the knowledge and awareness surrounding perimenopause and menopause, and those who are aware of the challenges may not have the appropriate tools to support their wives who may be struggling with aspects of perimenopause. While greater support is often received during other reproductive events such as pregnancy, there is more negativity, shame and secrecy associated with perimenopause (Dillaway, 2008). The husbands of the women involved in Dillaway’s study framed perimenopause as a problem and something that needs to be controlled. Women

reported feeling monitored by their partners and under their negative surveillance (Hayfield et al., 2024).

When describing their perimenopausal experiences, women stressed the importance of feeling supported by partners, family and peers (Refaei et al., 2022). Refaei and colleagues said that perimenopausal women must be supported by other women also going through the same experience. When the perimenopausal experience is shared, women can have conversations, open up, and empathise with one another (Refaei et al., 2022). They can discuss their experiences, sharing helpful tips and lifestyle changes, and answering each other's questions (Refaei et al., 2022).

Workplace Environment

The workplace brings its own set of challenges for perimenopausal women. Anto et al. (2025) said that perimenopausal women in the United Kingdom reported feeling unsupported by coworkers and managers as they navigated through perimenopause. It was highlighted that perimenopausal women struggle to discuss and talk openly with people at work about their experience (Anto et al., 2025). Women said they felt constant pressure to uphold their current responsibilities and maintain a positive outlook, a phenomenon described by Anto and colleagues as a 'superhero mentality'. Additionally, their participants described the embarrassment male coworkers expressed when perimenopause was a topic of discussion, which highlights the stigma and embarrassment that still surrounds perimenopause.

Cultural and Social Factors

Culture is an important factor in understanding how the experience of perimenopause and other ageing-related processes differ across cultural groups and ethnic backgrounds. Culture plays a role in the sense-making process of perimenopause and menopause, and impacts interpretation and experience (Sergeant & Rizq, 2017). Women's identity and social

position are socially constructed; this impacts how women perceive themselves, their social role in society and their experience of perimenopause (Sergeant & Rizq, 2017).

Hickey and Santoro (2022) found that for migrant women, the experience of menopause is shaped by racism, sexism, systemic discrimination, socioeconomic status and held beliefs. Ongoing life stressors and inequalities may also contribute to the symptoms of menopause being experienced differently (Hickey & Santoro, 2022). This was based on the finding that African American women in the United States may more commonly experience vasomotor symptoms that are longer lasting than those of white women from the United States (Hickey & Santoro, 2022).

Indigenous Experiences of Perimenopause. Cultural background significantly impacts the way perimenopause is interpreted and experienced, largely due to her held cultural and spiritual beliefs. Māori women, the Indigenous people of New Zealand, often described their experiences of perimenopause differently due to their long history of systemic colonisation, which is intertwined with our political, social, health and justice systems and their cultural identity (Bullivant Ngati Pikiao et al., 2022). Bullivant Ngati Pikiao and colleagues highlighted how Māori identity stems from the acknowledgement of social and cultural contexts, aligning with aspects of the biopsychosocial model due to its holistic nature.

Bullivant Ngati Pikiao et al. (2022) stated that Māori women conceptualise perimenopause as a natural process and view ageing more positively. Older women in Māori culture are respected and honoured, and have gained wisdom and cultural knowledge (Bullivant Ngati Pikiao et al., 2022). There are limited conversations in family and social contexts about the experience of perimenopause and menopause, due to this 'natural' conceptualisation, which contributes to a lack of knowledge about the topic in Māori culture (Bullivant Ngati Pikiao et al., 2022). The perimenopausal and menopausal ageing process is not something that carries such significant stigma and burden as it does in Western cultures, where growing older is often

feared and viewed negatively with the prospect of losing youth, femininity and freedom (Bullivant Ngati Pikiao et al., 2022).

The experience of perimenopause is also generally positive for Indigenous Australian women. Wood and colleagues (2025) described the Indigenous Australian menopausal process as something that allows women to gain status and respect, being considered a stage of eldership by many Indigenous communities. They stated that the ageing process of perimenopause and menopause enhances older women's relationships with younger women, in which older women are held in higher regard for their greater wisdom and knowledge. These positive perceptions of perimenopause significantly shape its experience, enhancing the potential for empowerment and personal growth (Wood et al., 2025). The perception of perimenopause in Western culture is the opposite of Indigenous conceptualisations, and this is evident in women's reports.

Symptom Management Based on Culture. Women from around the world use different symptom management strategies. O'Reilly et al. (2023) identified and discussed these management strategies. They said that some women, from parts of the world such as Saudi Arabia and Bangladesh, view perimenopause as a natural process. Women from these countries tend to avoid some forms of treatment for perimenopause, such as Hormone Replacement Therapy (HRT). From the perspective of viewing perimenopause as a natural process, women may simply put up with their troubling symptoms or tough it out (O'Reilly et al., 2023). They stated that women from Turkey described techniques for managing hot flashes and night sweats, including cold compresses, cold showers, and drinking cold water. Natural medicine and exercise were commonly discussed as management techniques, with nutrition also playing an important role (O'Reilly et al., 2023). The importance of a healthy diet was stressed. O'Reilly et al. said that some women believed that incorporating herbal teas such as chamomile

or milfoil, drinking boiled onion water, or adding curry leaves and garlic to their diet helped to relieve perimenopausal symptoms.

Conclusion

Overall, the perimenopausal experience is dynamic and varied. Experiences are shaped by social, cultural, and political norms, expectations, and assumptions. While biomedical models and definitions provide essential insights, they often minimise and overlook the complexities of women's experiences. Approaching from a biopsychosocial perspective allows for a more comprehensive understanding, validating women's voices and acknowledging the influence of stigma, cultural beliefs, and social support systems. It is crucial that continued efforts and further research are done to promote education, create open dialogue, and provide empathetic support to ensure that perimenopausal women feel empowered and stigma is reduced.

Chapter 2 – Menstrual Tracking Apps (MTAs)

Digital Health

There has been substantial development and growth in mobile health digital devices that are easily accessible and adopted globally. Lupton (2013) noted that these mobile health technologies have received recognition in the media, public, and clinical health environments and are often referred to as mHealth (mobile health) applications (apps) or technologies. As smartphone use increases, there is a greater opportunity to access health-related data digitally (Gambier-Ross et al., 2018). Digital health technologies, including smartphone apps and wearable devices, can measure our daily steps, sleep quality, and calories burned (Fox et al., 2019). Commonly, the use and influence of these apps have been revisited from a biomedical perspective. From this perspective, these apps offer individuals the opportunity to become the ideal "digitally engaged patient" (Lupton, 2014). Lupton said that to reach this ideal, individuals engage with digital health and medical information available to them online and practice self-care and management strategies. It is said that through this engagement, people gain control over their lives and health, becoming a 'better citizen' (Lupton, 2014).

Defining MTAs

MTAs are a type of digital health technology that fit under *FemTech* (female technology) (Pichon et al., 2022). FemTech is a rapidly growing industry that supports women's health and is estimated to be worth $37.35 billion by 2034 (Kelly et al., in press; Riley, Healy-Cullen, Rice, et al., 2025). Interest in MTAs has increased over the past ten years, with the creation of many new apps on the digital market. The Google Play Store offers 220 MTAs, and the Apple App Store around 250 MTAs, both receiving over 2 million downloads each month (Riley & Paskova, 2022). The attention and establishment of femtech have been positively recognised, given the long history of women's health being under-researched,

socially marginalised, and overlooked (Hendl & Jansky, 2022). MTAs have grabbed public and researchers' attention, although this attention is not entirely positive.

MTAs, which may also be referred to as period, fertility, ovulation, or reproductive tracking apps, generally function as trackers of menstruation, ovulation, symptoms, hormones, moods, and emotions, as well as for contraception and fertility purposes (Riley, Healy-Cullen, Rice, et al., 2025; Riley & Paskova, 2022). Once downloaded, the app prompts users through pop-up notifications on their devices to enter private information, such as premenstrual symptoms, details about their menstrual period (amount, onset, and colour of bleeding), and emotions (Riley & Paskova, 2022). In return, users receive a predicted time of ovulation and menstrual cycle pattern (Riley & Paskova, 2022).

MTAs are used as an umbrella term throughout this project and refer to apps labelled as period, fertility, ovulation, or reproductive-tracking apps. Although the various apps are labelled slightly differently, they often encompass very similar features.

MTA Variability

There are many MTAs available for free download and use, with *Clue* and *Flo* among the most popular (Tylstedt et al., 2023). Many of these apps have both free and paid versions, with the paid versions offering greater insights, predictions, and resources. Apps currently available appear to be striving to enhance technological capabilities to improve user interactions and accuracy (Tylstedt et al., 2023). An example of this is the LOONCUP app, which pairs with a menstrual cup to attempt to accurately provide information on your menstrual flow and cycle length, which stands out from traditional MTAs due to its technological advancement (Fox et al., 2019).

Tracking Perimenopausal Experiences

Digital Tracking

Some women who choose to keep track of their experiences during perimenopause, menopause and post-menopause may feel overwhelmed due to the large number of symptoms

possibly experienced during this time (Osman et al., 2023). MTAs have developed and expanded extensively over the past decade. They are generally marketed towards women who are fertile or menstruating, and promote the digital tracking of menstrual cycles, fertility, and associated symptoms (Tylstedt et al., 2023). Tylstedt et al. (2023) said that before the development of MTAs, women who chose to partake in menstrual tracking had to rely on traditional methods, which involved marking it in their diary or calendar, or keeping track of it mentally. Now, MTAs claim to provide a neutral platform where women can simply and effectively manage and track their menstrual cycles (Tylstedt et al., 2023). However, as I will discuss, they are far from neutral.

Gambier-Ross and colleagues (2018) reported that women had four main motivations for using MTAs; these included menstrual cycle tracking, for contraception and conceiving purposes, and fertility treatment support. Aside from these four main motivations, other reasons for use include tracking symptoms such as hormonal acne and mood changes, and attempting to link the onset of certain symptoms or stages of the menstrual cycle with specific moods or emotions (Gambier-Ross et al., 2018).

Self-Tracking

MTAs can provide a platform that allows an individual to self-track their behaviours, experiences, symptoms, moods and emotions. According to Knittel et al. (2021), self-tracking is the recording of information through various approaches, allowing the collection and reflection on personal data. Self-tracking creates opportunities for greater self-knowledge and awareness (Knittel et al., 2021). MTAs vary slightly from other self-tracking technologies due to the lack of control that comes with fertility and menstrual cycle patterns, said Knittel and colleagues. With tracking technologies such as the Apple Watch, people can gain greater control over their step count or exercise duration to help meet a target (Riley & Paskova, 2022).

There are numerous reasons people may choose to self-track, such as natural curiosity or a desire to better understand their body. The priorities, experiences and motivation to self-track for a perimenopausal woman would generally vary from that of a young woman trying to fall pregnant. Unfortunately, many self-tracking applications fail to recognise the shift in symptoms, experiences and motivations that may occur throughout the reproductive ageing process, which is why MTAs often struggle to meet the needs of diverse users (perimenopausal women) (Earle et al., 2021). There is a need to improve their design and user interactions for people who do not fit into the young, white, feminine, cisgender, heterosexual user for whom these apps are currently designed (Pichon et al., 2022). This highlights the importance of understanding perimenopausal women's experiences with MTAs and why further research needs to happen in this area.

MTA Adaptations for Perimenopausal Needs

Clue has recently introduced a new mode, *Clue Perimenopause*. McGee (2023) published an article on Clue's website, stating that, behind this new feature, substantial research has been conducted to better understand perimenopausal women's experiences, enabling the app to be better adapted to their needs. In this article, they acknowledged that there is minimal support for perimenopausal women due to stigma, and little is understood about this life stage. Additionally, the article claimed that, through this app mode, women will feel empowered by the new knowledge about their bodies and will be able to better manage their symptoms (McGee, 2023). This new feature is said to include new tracking abilities, such as the ability to track their experiences with HRT, and a new cycle view that is perimenopause-specific, with greater highlighting of changes in cycle length (McGee, 2023). While it is positive that Clue is striving to support perimenopausal women's experiences, it is disappointing that this feature is behind a paywall, limiting access for those unable afford it.

MTA Critiques

Despite people worldwide regularly using digital health technologies, it is important to recognise that their influence is not neutral. MTAs hold the powerful potential to produce knowledge, invoke emotions, enhance feelings of both control and empowerment, while also being a source of oppression and discrimination.

Pedagogical Potential

Previous researchers have highlighted that MTAs, beyond facilitating or preventing pregnancy, also have a broader pedagogical function (Riley, Healy-Cullen, Rice, et al., 2025). Riley and colleagues noted that MTAs can teach app users about their menstrual cycle patterns, including how fluctuations in hormones (such as oestrogen and progesterone) affect these cycles and their embodied experiences. Additionally, Clark and Southerton (2024) reported that some MTAs serve as sites for disseminating health information to their users. This creates the potential for learning new knowledge about women's health and reproduction (Clark & Southerton, 2024).

MTA Empowerment

MTAs have been argued to have the potential to be empowering, providing people with a way to evaluate, control, and manage their own data, which they may not have had easy access to before (Gambier-Ross et al., 2018). Building on this empowerment, these apps are thought to encourage self-discovery by creating a space that supports individuals as they interact with and reflect on their health data (Sillence et al., 2025). MTAs are said to give app users a role in knowledge production, essentially opening up opportunities for lay knowledge to be exchanged in online communities (Geampana, 2024). Supporting this, Riley and Paskova's (2022) findings indicated that women can gain a new understanding of their bodies and greater awareness of their embodied experiences through MTA use.

Lack of Inclusivity

Overall, MTAs and related technologies generally do not consider the various identities that app users may have, or in other words, intersectionality (Ervik & Wikström, 2025). Intersectionality refers to the interaction between social identity structures, such as race, class, and gender, and the impact of these overlapping or intersecting identities in producing discrimination, particularly towards marginalised people or groups (Ervik & Wikström, 2025; Gopaldas, 2013). The 'ideal' MTA user is typically assumed to be a heterosexual, cisgender woman; users who do not fall into this category, such as lesbian, gay, bisexual, transgender, intersex, and queer (LGBTIQ) individuals or those with diverse gender identities, are often not considered in the design and functionality of these apps (Ervik & Wikström, 2025). As a result, app users who do not fit this ideal may be categorised as 'abnormal' or 'irregular', potentially producing feelings of distress, anxiety and fear, said Riley and Paskova (2022).

Gender Stereotypes

Many tracking apps and other femtech health apps hold strong gender assumptions and stereotypes surrounding women, portrayed through their choice of language and imagery (Pichon et al., 2022). For example, Pichon and colleagues noted that many applications available on the Apple and Google Play stores often feature feminised icons and colours, such as butterflies, flowers, hearts, and prevalent pink and purple. Further, two-thirds of FemTech apps use gendered language, typically referring to app users as females, ladies, girls and women. A very limited number of apps use gender neutral imagery and language (Pichon et al., 2022). As a result, this can leave women who do not fit into this gendered embodiment, or a white, privileged and feminine position, feeling as though the MTAs are not designed and capable of meeting their diverse needs (Geampana, 2024).

Gambier-Ross et al. (2018) described this gender stereotyping as 'pinkification', which may evoke strong emotional responses for app users who do not identify as female or women.

The feminine and 'pinkified' imagery and language choices lack consideration for marginalised groups, including those who identify with the LGBTIQ community (Gambier-Ross et al., 2018). Current MTA language and imagery assume that app users identify with being feminine and female, which is an assumption that can cause users who do not fit this stereotype to feel oppressed, isolated, or discriminated against (Pichon et al., 2022).

Data Privacy

Riley et al. (2025) raised concerns about data privacy, specifically the amount and type of data collected and with whom the data is shared. The data produced by MTAs is often self-regulated within the MTA industry, meaning it often falls outside the scope of legal oversight (Kelly et al., in press). MTAs operate on the premise of data capitalism, meaning they transform personal health data into information that can be analysed and sold to other parties (Felsberger, 2025). While MTAs are often free for app users, they are run by for-profit companies, which means they utilise targeted advertising and share users' data with other parties to generate profit (Felsberger, 2025). Riley and colleagues said that users are often not fully aware of the app's data-sharing practices, creating opportunities for data misuse and exposing them to a range of risks. These risks may include redundancy, being a target for particular types of advertising, reproductive management, abortion-related legal action, and changes to the costs of their health insurance (Riley, Healy-Cullen, Rice, et al., 2025). It was highlighted that the app's data dissemination is often not made clear to users, communicated through complex language or lengthy policies (Riley, Healy-Cullen, Rice, et al., 2025).

According to Karen Levy, a legal scholar, the type of tracking enabled by MTAs can be described as *intimate surveillance* (Fox et al., 2019). This type of surveillance takes place when our private data is stored on commercial platforms that may share it with third parties. Building on this, Riley et al. (2025) stated that sensitive information that is entered into the app, such as the user's height, weight, medication use, sexual activity, menstruation patterns, mood, and

emotions, has the potential of being mismanaged and misused. Additionally, private information is collected from app users, including contact information, app and device usage data, and previous medical history (Riley, Healy-Cullen, Rice, et al., 2025).

Fox and colleagues (2019) said that the popular MTAs available on the Apple and Google Play app stores, including *Flo*, *Clue* and *Eve*, have varying privacy policies, with some placing the responsibility for data protection on the individual user. Many MTA policies state that users must be cautious about the personal data they share with applications, yet MTAs require users to provide personal data about their menstrual cycles and fertility to accurately predict them (Fox et al., 2019). Additionally, Fox et al. noted that privacy policies place the responsibility on users to regularly check whether the app's privacy policy has recently changed. This means that if the user is not vigilant about reviewing the privacy policy, their data may be shared with a third party without their knowledge (Fox et al., 2019).

The *Flo* app has been under recent scrutiny due to numerous data privacy concerns and complaints (Kelly et al., in press). Flo has been accused of on-selling users' private data to third parties and, as a result, has been issued a complaint by the Federal Trade Commission for breaching the Federal Trade Commission Act (Kelly et al., in press). Felsberger (2025) stated that for MTAs to become safer, changes are needed. They have said that this would involve tighter regulation of sensitive health data and enhanced management and security through clear consent and privacy policies. They have said that MTAs need to be more transparent with consumers around how their input data may be used for both prediction and research purposes.

Unreliability and Assumptions

Pichon et al. (2022) discussed the assumptions and generalisations made by MTAs and other fertility tracking apps. MTAs assume that the menstrual cycle will always and consistently fit neatly within the 28-day cycle and will be considered 'normal', and often promise accuracy (Pichon et al., 2022). The app design is set up under the assumption that all

app users primarily use it to track fertility or menstruation. App design fails to acknowledge diverse users, including individuals who are perimenopausal or those who have varying menstrual cycles (in the case of Polycystic Ovary Syndrome (PCOS)), which can result in a deviation from the average cycle duration (Pichon et al., 2022).

As mentioned before, MTAs predict the timings of various aspects of the menstrual cycle, which has been argued to be an important factor for many women (Gambier-Ross et al., 2018). Often, women rely on MTAs to plan for the arrival of their menstrual period, and women with regular cycles reported being satisfied with the apps' predictive abilities (Gambier-Ross et al., 2018). Women whose cycles did not fit this norm reported dissatisfaction with the prediction, Gambier-Ross and colleagues said. Perimenopausal women generally fit into a category where their menstrual cycles are irregular. Therefore, it is likely they may not be satisfied with the predictive abilities of the MTAs they are using. This highlights the need to research perimenopausal women's experiences with MTAs further, to understand how these apps can be better adapted to suit their needs.

Regulatory Power

Riley and Paskova (2022) highlighted concerns about the regulatory power of MTAs and their implications for how the menstruating body is understood. They stressed the powerful potential of MTAs, or rather the data that MTAs can produce, reducing women's experiences to purely biological datafied processes. This reduction has the potential to be harmful, as it separates from and almost disregards the embodied experience, prioritising digital health information as the truth (Riley & Paskova, 2022). Additionally, Riley and Paskova argued that MTAs contribute to the social construction of menstruation, shaping it as something that needs to be controlled and privately managed. MTAs position menstruation as an issue to be solved if the user is vigilant and monitors their cycles and symptoms carefully (Riley & Paskova,

2022). Ultimately, based on this argument, rather than reducing stigma and creating more awareness of menstruation, MTAs may be directly contributing to it (Riley & Paskova, 2022).

Research on MTAs

In the last decade, more research has been done on MTAs, particularly with women who are regular menstruators. This research has been beneficial in shaping our understanding of both the positive and negative potentials of these apps. Additionally, with women's health being under-researched, it has created space for conducting further research in this area to understand women's health and reproductive processes better. However, there is still a long way to go in acknowledging women who do not fit into this normal menstruating category, as the current research is very limited. Researchers, such as Riley and Paskova (2022), have been critical of the influences of MTAs. Attention is drawn in these articles to how MTAs are not neutral, highlighting how further research needs to be done to better understand the interactions had with MTAs for women from diverse backgrounds.

Conclusion

To summarise, MTAs are not neutral and play an influential role in shaping people's perceptions, their experiences, and how they interpret their bodies and reproductive health. While MTAs can foster greater self-awareness, knowledge, and understanding, they fail to meet diverse users' needs, incorrectly categorising users' experiences by relying on narrow parameters of the 'normal' MTA user. MTAs are digital platforms that reflect and reproduce socio-cultural biases, assumptions, and attitudes towards reproduction, health, and menstruation. As their use becomes more common, it is essential that future studies prioritise conducting research with diverse individuals, so that MTA design can be better tailored to meet their needs.

Chapter 3 – The Current Study

Perimenopause marks a time of significant changes in a woman's physical, psychological and social environments, presenting many aspects that should be further investigated. Perimenopause is an interesting and deserving area of research, although the current literature remains limited and is neither substantial nor comprehensive. Previous studies have predominantly studied perimenopause through a biomedical lens, reducing women's experiences to hormonal fluctuations, menstrual cycle changes, and a clinical list of symptoms. Even some qualitative research remains confined to looking at perimenopause solely through a biomedical framework, focusing entirely on healthcare interactions, the medical parameters of perimenopause, symptoms, diagnosis, and HRT while overlooking the broader socio-cultural dimensions that shape women's realities.

Hayfield et al. (2024) emphasised that understanding the complex experiences of perimenopause requires considering the broader biological, psychological, and social factors. They emphasised that sense-making during perimenopause occurs through the sharing of lived experiences. The phenomenon extends beyond biological hormone changes, encompassing psychological, social and cultural aspects that are equally significant.

It has been argued that perimenopause is shaped not only by the social and psychological expectations of what it is and how it should be experienced, but also by the unique historical and contemporary influences that inform its construction (Atwood et al., 2008). The experience of perimenopause is deeply rooted in its social construction (O'Reilly et al., 2023). Research that deepens understanding of the diverse experiences of perimenopause is essential, given the current limitations in the literature.

Much of the research examining perimenopausal experiences and women's perceptions of MTAs adopted a thematic analysis analytical framework. In contrast, the current study utilised a discursive approach to explore how language and discourse are used to construct the

experience of perimenopause. This includes analysing how discourses expressed through language and conversation attribute position or negative meanings to participants' experiences of perimenopause (Sergeant & Rizq, 2017).

The way perimenopause is constructed and experienced varies dramatically between women. For some, it is described as liberating; for others, it is just a 'change in time'; and for others, it could be considered a significant life burden. Due to these varied experiences, it is crucial for researchers to explore the experiences of perimenopause for women from diverse backgrounds. This includes women who do not identify as white, cisgender, or heterosexual, with whom a significant portion of previous research has been conducted. This leads into the current project's research aim:

How do diverse perimenopausal women construct perimenopause within their talk about menstrual tracking apps in a New Zealand context? Additionally, this study explores how MTAs shape women's experiences of perimenopause. Adopting a participatory approach, the study seeks to understand how discourse shapes women's understandings of perimenopause in Aotearoa/New Zealand.

Chapter 4 – Methodological Approach

This chapter discusses the methodology and methods used in this study. Initially, the chapter outlines the theoretical framework that underpins the research, describing how social constructionist epistemology and discourse theory inform the research. The chapter then outlines the research design, including discussing the research method of Cooperative Inquiry (CI), participants, quality criteria, the data collection and analysis process, ethical considerations, and reflexivity.

Epistemology – Social Constructionism

This research is grounded in the theory of social constructionism, as it allows for the deep exploration into how diverse women in New Zealand construct their experiences of perimenopause, and how MTAs shape these experiences. A social constructionist approach informed the research, which was not focused on uncovering an objective reality but instead on understanding the different ways in which perimenopause can be constructed (Burr, 1998). This research project was guided by the social constructionist arguments that reality is socially constructed, that there are multiple legitimate realities, and we can make sense of people's actions and statements through language and discourse.

The Social Construction of Perimenopause and Menopause

The meaning of perimenopause and menopause has been socially constructed throughout history. Social constructionism argues that our understandings of perimenopause are 'historically and culturally specific' (Burr, 2015b). According to Burr, women's experiences of perimenopause are a product of culture and history, while also being dependent on social and economic influences present at that point in time.

Atwood et al. (2008) described the evolution of the meaning of menopause, stating that the first references to menopause dated back to around 1816, when it was labelled a medical condition known as *la Menepause*. Following this, throughout the 1800s, menopause was tied

to statements such as ‘death of the womb’ and experiences of hysteria and irritability (Atwood et al., 2008). Atwood and colleagues said that throughout the 19th century, since women’s life expectancy was around fifty, the experience of menopause was associated with being near death.

The dominant biomedical construction of perimenopausal and menopausal women supports the idea that their experiences can be reduced to failing ovaries and a deficiency in reproductive hormones, said Dickson (1990). Additionally, the biomedical discourse positions medical professionals as experts who hold all the knowledge there is to know, and the perimenopausal women as someone who needs the help of medical professionals (Dickson, 1990). Understanding phenomena strictly through a biomedical lens aligns with a positivist theoretical framework, to which social constructionism critiques the reductionistic (complex human behaviours are reduced to simple explanations) and essentialist (particular traits are thought to be innate or biologically predetermined) nature of this knowledge (Burr & Dick, 2017; Cromby, 2015).

Over time, understandings of perimenopause and menopause have shifted, though the biological changes of this life stage remain consistent (Utz, 2011). Utz aimed to highlight the generational differences in how mothers and daughters discuss perimenopause, finding that each generation viewed menopause and ageing differently, shaped by social and cultural factors. Currently, the construction of perimenopause may differ from the past or future due to shifting social, political, and cultural constraints (Utz, 2011). It is important to recognise that the experiences of perimenopause and menopause described in the literature may differ across historical periods, influenced by different opportunities, resources, and competing discourses (Utz, 2011).

Gergen (2009) suggested that the world we see with our own eyes is likely the same as what someone else sees; however, what sets us apart is how we construct and interpret that

world. This idea is central to social constructionism: our realities are shaped by society and culture. It was previously argued that phenomena such as gender and identity were fixed (Weinberg, 2009). However, social constructionists have worked to shift this view, demonstrating that, according to Weinberg, these phenomena are culturally, socially, and historically relative.

Gergen (2009) argued that our lived realities are socially constructed:

> For example, 'Problems' don't exist in the world as independent facts; rather we construct worlds of good and bad, and define anything standing in the way of achieving what we value as 'a problem'. If the conversation could be changed, all that we construct as 'problems' could be reconstructed as 'opportunities'. (p.04)

This quote demonstrates how the social construction of phenomena, such as perimenopause and menopause (which is generally constructed as a problem rather than an opportunity), can shape how they are experienced. The experience of perimenopause differs across social and cultural groups and among individuals.

Multiple Realities

Social constructionists argue that multiple legitimate realities exist. Gergen (2012) said that knowledge of the world and ourselves is generated through human relationships and social interaction, and knowledge accepted as legitimate or true is based on social processes that are historically and culturally situated. Gergen also stated that there is no single depiction of the world through language that is more accurate than others, highlighting that there are multiple realities. Social constructionism can also be described as being anti-realist, denying that knowledge directly reflects reality (Andrews, 2012). Instead, social constructionism supports relativistic assumptions, whereby there are multiple ways of interpreting and experiencing the world or phenomena (White, 2004).

This research project drew on a social constructionist epistemology, appreciating that although individual experiences may be different, they are all legitimate. This is important to highlight, as my research needed to account for the diverse experiences of individuals who may be marginalised in the community. Without the perspective that all their experiences are legitimate, there would be no point in prioritising diversity.

Taken for Granted Knowledge

Social constructionism can be defined differently depending on who is making the definition; however, it is generally opposed to positivism and empiricism, which approach knowledge as objective (Burr, 2015b). Burr said that social constructionism involves critically examining taken-for-granted knowledge and carefully considering our assumptions about the workings of the world. Allen (2005) provided an example of this critical thinking, stating that we should challenge social categories, including gender and race, as these divisions are not real but instead social constructs.

The Role of Language

Social constructionists argue that any attempt to describe the workings of the world depends on the laws of discourse (Edley, 2001). Edley said that this understanding has historically been criticised from an ontological point of view, as essentially it claims that, outside language and discourse, we have no way of describing the world. But from an epistemological standpoint, our reality is constructed through language and discourse (Edley, 2001).

From a social constructionist perspective, language is performative and used to construct our realities (Durrheim, 1997). White (2004) noted that these constructions may also be referred to by discourse, knowledge, worldviews, or beliefs. Creating distinctions between these terms in everyday language use is not a priority for a social constructionist; instead, they can be understood as ways of making sense of the world and human experience (White, 2004).

Taking a social constructionist stance means that the meaning of perimenopause is constructed through social systems rather than by individuals (Allen, 2005). Perimenopause is often framed differently across many contexts, affecting women's experiences of perimenopause and ageing (Winterich & Umberson, 1999). A demonstration of this is in 'old wives' tales' that circulate within home and work environments that play into the construction of menopause being an experience to be fearful of, where women supposedly become irrational and 'crazy', said Winterich and Umberson.

Theoretical Perspective – Discourse

This research project was guided by discourse theory to examine how perimenopausal women in Aotearoa/New Zealand constructed and made sense of their experiences. According to Burr (2015b), social constructionism is thought to underpin discursive psychology and discourse analysis. Discourse analysis is supported by the philosophical assumptions that there are different legitimate ways of constructing the world and that texts can be interpreted in multiple ways, which align well with a social constructionist epistemology (White, 2004). As I have adopted a social constructionist perspective and the understanding that there are many legitimate realities conveyed through discourse and language, I also acknowledge that individuals draw on different discourses that intersect when describing their experiences of perimenopause (Burr, 2015a). The various discourses available to people may compete, overlap, and influence one another (Alspaugh et al., 2021).

A discursive approach allows the researcher to gain an understanding of the dominant discourses that construct our experiences of reality and to acknowledge the power relations, societal norms, and ideologies located within discourse and language (Fairclough, 2010). From a discursive standpoint, language is understood to be capable of influencing people's behaviour and belief systems, restraining social understandings and relations (Rowson et al., 2023).

One way of defining a discourse is as "a set of meanings, metaphors, representations, images, stories, statements, and so on that in the same way together produce a particular version of events" (Burr, 2015a, pp. 74–75). Discourses allow and restrict what can be spoken about, by whom and in what environment (Willig, 2021). Additionally, discourses create subject positions, that when taken up, have implications for how people make sense of the world, their identities, experiences, and behaviour (Willig, 2021).

Foucauldian Discourse Analysis (FDA)

For the analytic method, I have adopted the Foucauldian version of discourse analysis. FDA is an appropriate method of data analysis, as my focus is on language and the discourses available to women, and how they draw on these discourses to construct their experiences of perimenopause (Willig, 2021). Discourses function to construct aspects of our social world, which, in turn, shape our thinking, experiences, and practices (Wiggins, 2017).

FDA is built on the ideas of Michael Foucault, who was an influential post-structuralist philosopher who encouraged greater acknowledgement of the productive capabilities of power (Riley et al., 2021). Foucault claimed that our thoughts vary across different socio-historical periods, with what can be argued to be 'truth' significantly influenced by socially accepted ideas and cultural norms at that point (Riley et al., 2021). Foucault's claim aligns with a social constructionist approach, as reality is argued to be influenced by social, cultural, political, economic, and historical factors. Additionally, Foucault's claim aligns with this research project by highlighting the importance of researching the construction of perimenopause and the perspectives of perimenopausal women in New Zealand at this time, as these will be influenced by current socio-cultural norms.

Power plays a significant role in FDA, with discourses producing certain 'truths' about the world over others, that impact what we are capable of doing and saying, says Willig (2021). Power within FDA is understood to be more than just oppression and exclusion; it is considered

productive, in the sense that it can be used to achieve something (Hvas & Gannik, 2008a). Power is also maintained through the discourses people draw on to talk about something, as well as through the reproduction and reinforcement of social structures and institutions (Wiggins, 2017).

Research Design

This qualitative research project's theoretical framework was guided by social constructionism and discursive theory, and data were analysed using FDA. This study utilised the qualitative data collection method of Cooperative Inquiry (CI). I report on ten CI groups held with 24 diverse users of MTAs, who were in perimenopause. Each group met four to five times, and 46 hours of data were generated over several months from November 2023 to June 2024. The collection of this data is part of a larger project that looks at MTA use for people at three different life stages, including 16 to 18-year-olds, post-pregnancy and perimenopause. These three life stages were selected as less is understood about MTA use during these stages, particularly when the cyclical bleeding may be irregular.

Cooperative Inquiry (CI)

CI is a participatory action research method in which small groups collaborate with a trained researcher to inquire into, explore, and reflect deeply on an issue or topic, resulting in the co-creation of new knowledge (Russ et al., 2025). Individual members of each CI group are encouraged to build on each other's contributions, to create new knowledge they may not have created individually. The action research method of CI differs from traditional psychology and traditional psychology data collection methods in many ways. Riley and Reason (2016) argue that in traditional psychology, there is a greater separation between the researcher and participants, with participants generally not dictating what, how, or why something is being studied. With CI, this differs, as researchers work with participants to inquire into practical

problems of shared concern, with both researchers and participant's contributing to and guiding the research (Riley & Reason, 2016).

CI aligns with what is labelled an *extended epistemology*, which includes rational and empirical ways of understanding the world that align with positivist psychology, as well as a form of 'knowing' achieved through research participation (Riley & Reason, 2016). Heron (1996) outlined the four outcomes that can be achieved with CI. *Experiential* knowledge is achieved through personal transformations, in which changes in personal experience are grounded in connecting with people and in gaining a deeper understanding of the enquired topic. *Presentational* knowledge, which can otherwise be understood as creative expressions of understanding, is achieved through the expression of symbolic and creative art forms that may include writing, music, and other types of artistic expression. *Propositional* knowledge aligns with traditional research frameworks, in which formal findings are presented through descriptions and theory. Finally, there is the *practical* knowledge, which includes the practical skills and competencies achieved through the research inquiry.

A few other key components of CI include cycles of action and reflection and critical subjectivity. CI involves moving through the phases of action and reflection, otherwise known as research cycling, an iterative process that requires the researcher and participants to immerse themselves in a research area, reflect on their experiences, and then engage in an action decided together (Reason, 1999). Critical subjectivity requires the researcher to acknowledge that knowledge is gained through their own subjective experience during the research (Heron & Reason, 1997). However, it also requires the researcher to critically examine their assumptions and biases that shape their experiences, and the sense-making process (Heron & Reason, 1997).

CI was selected as the research methodology for this project because it enabled the in-depth exploration of the diverse experiences of perimenopause while acknowledging the socially constructed nature of knowledge. CI was an appropriate method for this research

project, as perimenopause and women's health have previously received limited research and attention, and the use of this methodology places power back in participants' hands (Russ et al., 2025). Russ and colleagues said that the research shifts from being 'about' people to 'with' people, and that, compared to traditional research methods, participants are involved in the identification and development of new knowledge and in the outcomes of research, which is crucial when you are working with people who are already marginalised.

Method

Participant Recruitment

Perimenopausal women aged approximately 45 to 55 years were recruited through the research team's existing relationships and by reaching out to groups throughout the Wellington region. The groups of people that were approached included people who identified as ethnic, disabled, mothers living in low-income neighbourhoods, living with a long-term chronic illness, and those who identified with being sexual and gender diverse. Other groups throughout New Zealand associated with menstrual health were also approached, including Non-Governmental Organisations (NGOs), Small and Medium-sized Enterprises (SMEs), and organisations and businesses that support Māori. The research team also expanded their recruitment reach through targeted Instagram advertising and Facebook groups.

Participants were provided with a 'Participant Information Form' that outlined the project, the researchers, what participation involves, and how research information is used (Appendix A). Participants had to provide consent (Appendix B) and were told that they could withdraw from the study at any time before assembly of the CI groups, as well as at any point throughout the study. However, participants were informed that they would not be able to withdraw the information they provided after the study finished, as it would be part of the discussion.

The research team described recruitment as challenging, suggesting that this could possibly have been due to women not being aware that they are in perimenopause, or the stigma associated with a perimenopausal identity. The research team adapted their original recruitment call from 'people in perimenopause' to 'people who are over 45 and experiencing changes in their bodies'. This shift in wording helped recruit a greater number of participants.

Overview of the Participants

Participants during recruitment had to complete a demographic questionnaire that enabled the research team to assign them to appropriate demographic groups. When participants fit into several demographic groups, they were given the option of choosing which one they preferred, when possible. Each group was facilitated by two members of the research team.

Group one was labelled 'Chronic health condition' and included two participants ("MJ" and "Beth"), who met over Zoom five times.

Group two was labelled 'Uni staff or student and not using MTAs for fertility' and included three participants ("Rita", "Zoe", and "Georgia"), who met over Zoom five times.

Group three was labelled as 'Self-identify as fat', and included three participants ("Sophia", "Grace", and "Ruby"), who met over Zoom five times.

Group four was labelled 'Chronic health condition and self-identify as fat', and included three participants ("Sienna", "Sadie", and "Charlotte"), who met over Zoom four times.

Group five was labelled 'Uni staff and identify as feminists' and included two participants ("Trudy" and "Mable"), who met over Zoom five times.

Group six was labelled 'Rainbow', for participants who identified with the LGBTIQ community. This group included three participants ("Isla", "Jessica", and "Mia"), who met over Zoom four times.

Group seven was labelled ‘Young and not using MTAs for fertility’ and included two participants (“Caro” and “Anne”), who met over Zoom four times.

Group eight was labelled ‘Not using MTAs for fertility’ and included two participants (“Celeste” and “Rose”), who met over Zoom four times.

Group nine was labelled ‘Indigenous women/Wahine Māori’ and included two participants (“Mere” and “Ashley”), who met over Zoom six times.

Group ten was labelled ‘Self-identify as fat and Indigenous women/Wahine Māori’ and included two participants (“Willow” and “Aroha”), who met over Zoom four times.

Quality Criteria

Inclusion criteria involved the study participants being able to speak and read English and identifying with being perimenopausal. For this study, being perimenopausal was defined as ‘being in the transition to menopause at the end of menstruation that generally occurs between 47 and 51 years of age’. To be eligible to participate, participants needed to be currently using MTAs and have been using them for at least three months. To participate, participants needed to commit to attending three CI meetings.

Data Collection Procedure

The following research procedure was created and carried out by the research team (Appendix C). Research data was obtained through the method of CI, with small groups of approximately three to five meeting over Zoom. The meetings were audio-recorded and transcribed using a simplified version of Jeffersonian transcription notation (Jefferson, 2004). Participants’ names were replaced with pseudonyms, and identifiable information, such as their locations and workplaces, was removed. Transcriptions were sent to the participants, which allowed them to read and amend them if they wished. Participants were given this opportunity to amend for two weeks; after this time, no further amendments or withdrawals could be made.

For the inquiry into the use of MTAs among perimenopausal women, the procedure began with the research team carefully considering how they could adequately attend to the core principles of CI. To achieve *a worthwhile focus*, before beginning the research process, the research team engaged in foundational groundwork to ensure that discussions on MTAs and how they shape people's lives would be valuable to those involved (Riley, Healy-Cullen, Easterbrook-Smith, et al., 2025). The *democratic* principle was achieved by ensuring shared ownership and equal agency (Riley, Healy-Cullen, Easterbrook-Smith, et al., 2025). *Cycles of action and reflection* encouraged participants to reflect on what they already knew, identify an action to develop their learning, and reflect on that action. The *emergent design* principle meant that the meeting plans and future inquiries were developed after each meeting, and different groups pursued different lines of inquiry (Riley, Healy-Cullen, Easterbrook-Smith, et al., 2025). The research team were cautious about the grouping of the CI groups, as it was essential that everyone involved felt they could connect with and resonate with other members of the group, and, if possible, with a member of the research team too.

The research team planned a meeting outline to guide each group through the CI procedure. Each meeting began with a welcome and opening Karakia. The research team aimed for the first meeting to involve introductions and rapport-building, with participants becoming familiar with the researchers, other participants, the project aims, and the CI structure. A safe space needed to be created, which meant discussing safety and ground rules. Participants were then asked to reflect on what initially drew them to the project, which prompted further discussion and enabled key insights to be identified. The research team suggested a creative free-writing exercise and encouraged participants to choose an activity they could carry out, so it could be reflected upon at the next meeting. The meeting closed with final reflections and a Karakia.

Subsequent meetings involved an opening activity that prompted participants to produce three words that reflected how they felt. Following this, participants were encouraged to discuss their learnings from the previously planned actions and reflect on shared learnings. Researchers provided prompts and activities when discussions slowed. The meetings were wrapped up with a summary of key discussion points, planning new reflective actions, and a closing Karakia. The final CI meeting also included an opening activity and reflective discussions, with a greater focus on reflecting on the research project from participants' perspectives (for example, challenges encountered or benefits of participation). This was followed by a final closing action that acknowledged significant research takeaways and reflections, recognised the contributions of each group member, and included a closing Karakia.

Data Analysis

The data were analysed using FDA, to explore how perimenopause was discursively constructed. I was guided by Carla Willig's (2021) procedural guidelines and Riley and Wiggins's (2019) practical method for analysing discourse, as well as by wider reading on discourse analysis (Burr, 2015a; Elder-Vass, 2012; Parker, 2014; Riley et al., 2021; Wiggins, 2017). After I gained access to the transcripts on Massey's OneDrive, I imported them into the qualitative data analysis software NVivo. I utilised NVivo throughout the analytical process to organise the data into codes, keep track of keywords and notes, and I commonly used the 'word frequency' query to identify common words across participants and CI groups. The data analysis process began slowly and thoroughly, with each transcript read before coding. It was important that I did not rush this step, as I did not collect the data myself; I needed to be well familiarised with it.

I began the analytical process by identifying my object of interest (perimenopause) and related terms, including 'the transition' and 'the change'. After reading through each transcript

and before starting the coding process, I set up a larger number of 'parent codes' in NVivo that were broad. I felt these parent codes were relevant to my research questions and to how participants discussed their experiences of perimenopause and interactions with MTAs. The parent codes included 'commercialisation', 'community support', 'biomedical', 'natural', 'neoliberal', 'self-discipline', 'wellness', 'changing body', 'empowerment', 'invisibility', 'self-care' and 'uncertainty'.

As I read through each transcript, I manually assigned the data to the relevant code or codes. With each new code, I made notes on keywords or repeating phrases participants used to describe their experiences of perimenopause. As I worked through the initial coding process, 'child codes' that fit within the 'parent codes' started to become clearer, which supported the process of grouping phenomenon and organising the transcripts into "corpus of data" (Riley & Wiggins, 2019, p. 240).

Within the 'biomedical' parent code, the child codes that arose included 'biomedical interactions', 'symptoms', 'treatment' and 'uncertainty'. In the 'neoliberal' parent code, the child code that arose was 'individual responsibility'. Within the 'changing body' parent code, the child codes were 'identity', 'management', 'relationships', 'shame', 'stereotypes', and 'symptoms'. In the 'empowerment' parent code, the child codes were 'advocate', 'break silence', 'community', and 'identity'. For the 'invisibility' parent code, the child codes were 'advocate', 'commercial interests', 'conversations', 'culture', 'disempowerment', 'knowledge and awareness', 'research', 'support', 'taboo, and patriarchy'. Finally, the 'self-care' parent code included the child codes of 'culture', 'kinder to self', 'maintenance', and 'management'.

My analytical process was not linear, and the coding process was iterative, meaning I went back and forth between reading and analysing the data and sorting it into patterns and codes. As I read and re-read the transcripts, I asked myself analytic questions that were similar to those suggested by Riley and Wiggins (2019), such as, 'What is being constructed here?'

‘How is perimenopause being constructed?’ and ‘Why are they constructing perimenopause in this way now?’ Additionally, I considered aspects such as laughter and longer pauses to gain a broader perspective on how perimenopause was being constructed.

Upon reviewing my codes and keywords, I began to identify some of the more dominant constructions of perimenopause used by the participants. After going back and forth with my supervisor and iteratively considering the key ways participants discussed perimenopause, I identified the discourses that predominantly shaped my object of interest (perimenopause). I found that codes initially considered separate from other codes fit together; for example, the ‘commercialisation’ parent code fit better under the ‘neoliberal’ code.

Ethics

The research team, led by Professor Sarah Riley, gained ethical approval from Massey University Human Ethics Committee (MUHEC) (discussed in Appendix D). Through their ethics application, the overarching research project’s aims and expected outcomes were communicated, including advancing knowledge through scholarly contributions on the relationship between identities, bodies, and digital health technologies (MTAs) for diverse women living in New Zealand. In their ethics application, the research team highlighted ethical issues, including obtaining written and ongoing verbal consent, anonymising the names and locations of study participants, ensuring confidentiality, and considering data storage and security.

The formed CI groups created their own group ground rules, with the researchers remaining reflexive and aware of participant well-being to ensure the environment remained a safe and supportive space. Additionally, the intersecting identities of participants were carefully considered to ensure that the formed CI groups shared similar characteristics (for example, Māori identity or a chronic illness). Participants received a $30 voucher after each meeting to compensate them for their time.

According to the research proposal, the thoughtful implementation of the ethical issues described above was not expected to harm study participants. Additionally, the research team described several expected benefits to the participants from the project. These benefits included participants being able to move the inquiry toward what is important to them, developing different ways of thinking about their bodies and menstruation, and, through their experiences with MTAs, potentially influencing and improving new MTA designs.

As the research team worked with Māori women, Associate Professor Tassell-Matamua was brought on as a cultural consultant with Kaupapa Māori experience. The CI structure and research process were adapted to align with a Māori-centred approach. This meant that the recruitment process time was extended to develop a greater relationship and connection between the participants and the research team. Tikanga (Māori customs, protocols and social values) (Massey University, 2017), such as Karakia, were also ascertained with Māori participants.

Throughout the research process and working with the data produced, the research team and I ensured the obligations and principles of Te Tiriti were continuously met. This stems back to the selection of the data collection method, with CI chosen for its participatory nature. Māori participants were expected to benefit from the research, as they had the opportunity to move the inquiry into spaces important to them. Additionally, findings from Māori participants would provide greater insight into their experiences of perimenopause and their use of MTAs, potentially informing the design of new MTAs. In recognition of the sovereignty of Māori data, data use was transparently communicated to Māori participants.

A minor amendment to the ethics application request was made to MUHEC so that I could gain access to the anonymised transcripts and include extracts from them in this project. The transcripts were accessed through my Massey University student OneDrive. Transcripts

were not downloaded to any private device to ensure the data were protected by the same privacy and security parameters as the primary study.

Collected data is stored on a password-protected laptop, which has been backed up using a password-protected secure cloud space. Only one member of the research team (Sarah Riley) had access to meeting recordings. Audio recordings and anonymised transcripts are kept for five years in a secure location before being destroyed. Professor Sarah Riley is the responsible person for this process for non-Māori data, and Natasha Tassell-Matamua, who is a Māori member of the research team for Māori data. Before beginning participation in the study, participants were given the option to have their data archived. However, data collected from Māori participants will not be archived in recognition of data sovereignty.

Reflexivity

Reflexivity is an essential aspect of qualitative research. Therefore, I took the time to carefully consider my reflexive position before beginning and throughout the research project, reflecting on how it impacted the research process and outcomes. I was drawn to working on research data that was situated in the perimenopause and MTA space, as I was aware that perimenopause continues to be an area of women's health that is under-researched, particularly in an Aotearoa/New Zealand context and with diverse and marginalised individuals. Carrying out this research was important to me because I wanted to learn more about perimenopause discourse and how technology influences it.

Positionality

I am conscious that I come from a privileged background, in the sense that I am a young, cisgender, Pākehā, educated, middle-class woman from Aotearoa/New Zealand. I was also conscious that this social privilege would have flowed through into my research, influencing how I analysed the talk of perimenopausal women with marginalised identities in New Zealand. To ensure that I was thinking about my position in and influence on the research project, I kept

a reflexive journal throughout the research process. This reflexive activity allowed me to reflect on my thoughts, biases, and assumptions as they came up throughout the process.

Like many people, I started this research journey with very minimal understanding of what perimenopause was. In addition, I have not personally gone through the experience of perimenopause, which, in other terms, I could be considered an *outsider* to the research. Having not experienced perimenopause myself was both beneficial and limiting to the research project. It was beneficial because it meant I did not impose my own experiences of perimenopause on the research, and it allowed me to make sense of the data and of how participants described their perimenopausal experiences from a naïve or 'outside' perspective. In contrast, my lack of perimenopausal experience meant I could not relate to the participants or their experiences, which may have led me to misinterpret aspects of the research or miss subtle dynamics due to my limited experiential understanding. To mitigate this, I conducted extensive groundwork and research before beginning the analytical process to understand the various discursive constructions of perimenopause and how it may be experienced.

Reflecting on the Analytical Process

As I conducted a secondary analysis of the data, I was situated further from the data collection process than I would be if I were collecting the data myself. It took me longer than I had expected to familiarise myself with the data, requiring many readings and re-readings of the transcripts. This re-reading was an important step in my research project, as I wanted to fully grapple with the nuances in the data. Additionally, FDA was not an analytic framework I had much experience with. I had to shift my thinking from a thematic to a discursive perspective.

Power Dynamics

An aspect of FDA is that it is underpinned by the concept of power, which is maintained and produced through discourse (Willig, 2021). Therefore, it is important to reflexively

consider power and my positionality within this research project. The power dynamics I have identified and discussed are based on my secondary analysis of the data and on not personally interacting with participants; these dynamics would be different if I had interacted with the participants myself.

I reflected on power in relation to the participants and the broader perimenopause community, which informed my methodological framework. I am conscious that power is both repressive and productive. The perimenopause community may be repressed by power, with previous research indicating that they can be devalued due to their reproductive status and are subject to ageist and patriarchal perspectives (Peters et al., 2025). Therefore, it was important that their perspectives were heard and acknowledged. This flowed through into my research, with a social constructionist approach legitimising the different realities within the perimenopausal community. The methodological framework chosen by the research team allowed the participants to lead the inquiry in ways that were important and beneficial to them, which was crucial given many participants' marginalised identities. Additionally, my research project drew on discourse theory, which views language as performative and allows people, including myself, to draw on different and intersecting discourses in our talk to construct objects and position ourselves in various ways.

Chapter 5 – Findings and Discussion

This chapter describes and discusses the discourses identified using Foucauldian discourse analysis (FDA). The five main discourses that were predominantly drawn on to construct the participants' experiences of perimenopause were labelled the biomedical discourse, natural discourse, neoliberal discourse, 'forever young' discourse and taboo discourse.

Discourse One: The Biomedical Discourse

Introducing the Biomedical Discourse

Many participants frequently used the biomedical discourse to construct their experiences of perimenopause. According to Hvas and Gannik (2008a), the biomedical discourse is based on positivist ideas that rely on natural-scientific assumptions. These natural-scientific assumptions assume that diseases have an underlying cause and that determining their cause provides an opportunity to search for a method or treatment to address them (Hvas & Gannik, 2008a).

The biomedical discourse is not novel; instead, it is a dominant discourse that constructs perimenopause as an oestrogen deficiency disease. The deficiency disease is associated with various symptoms, hormonal changes, and an increased future risk of medical conditions and diseases (Hvas & Gannik, 2008b). Leng (1997) described how the biomedical construction of perimenopause as an oestrogen deficiency disease stems back to sex endocrinology research that was done during the 1920s and 1930s. Through this research, oestrogen was understood to be the female sex hormone that was primarily produced by the ovaries (Leng, 1997). As oestrogen production changed through perimenopause, the ovaries become 'defective', and oestrogen deficiency occurs, said Leng. However, this oestrogen deficiency can be treated through hormone replacement therapy (HRT), which is why perimenopause can be thought of as a disease that is capable of being 'treated' (Leng, 1997).

The biomedical discourse has been drawn on dominantly in media representations of perimenopause across the globe, with media messages and advertisements drawing attention to the ageing process and the 'age-related' decline that occurs during the perimenopausal period (Rowson et al., 2023).

How Did the Participants Draw on the Biomedical Discourse to Construct Perimenopause?

When drawing on the biomedical discourse to construct their experiences of perimenopause, the participants frequently used the words of "doctor", "doctors" or "GP"; "symptom", "symptoms", or "symptomatic"; "hormone", "hormones", "hormonal", and "hormonally"; "medicine", "medication", "medically", or "medicate"; "HRT" (Hormone Replacement Therapy); "test", "tests", and "testing"; "side effects"; "oestrogen" and "oestrogen patch"; "progesterone"; and "pharmaceutical companies".

Many of the participants drew on this discourse to construct perimenopause as an experience that often involved difficult-to-manage symptoms, with these symptoms being deemed manageable with the help of hormone-related treatment. The women used the biomedical discourse to construct perimenopause as a medical issue that needed the help, guidance and support of medical professionals. Additionally, they used the biomedical discourse to describe their experiences of perimenopause as being dismissed by medical professionals, as something holding uncertainty, and as something that was labelled as abnormal.

Perimenopause Constructed as a Medical Condition

The biomedical discourse was drawn on by the participants to construct perimenopause as an experience that required medical treatment and support, which involved doctor visits, seeking medical advice, and pharmaceutical intervention. The medical conditions of bone density loss and osteoporosis that were experienced by some of the participants supported the biomedical construction of perimenopause as something that needed to be medically monitored

and treated. Some of the participants described pursuing HRT, hopeful that it would minimise some of the adverse bodily changes associated with perimenopause. The seriousness and intensity of the symptoms experienced by some of the participants often sparked concern and anxiety, leading many of them to seek medical advice, positioning themselves as *patients*.

Many of the participants described perimenopause as something you consult your doctor about, seeking advice and treatment options. Rose, positioned as a patient, drew on the biomedical discourse to construct perimenopause as a medical issue that needs pharmaceutical support. “Rose” said:

> Anyway, so we were talking about my concerns around osteoporosis and, you know, bone density. And I was asking about HRT and that sort of thing, so. We had quite a yeah, quite a thorough conversation, she was saying about HRT, what basically we talked about a whole bunch of options. She was recommending a particular antidepressant for the rage. And she's prescribed it.

“Georgia”, also positioned as a patient, described perimenopause as an ongoing medical issue, requiring going back and forth to the doctor’s clinic for evolving problems. She said:

> It made me think about what was my highest priority symptom, and I guess for relating that sort of to menopause is umm, that maybe my symptoms, like I can't remember what I went to the doctor about five years ago for perimenopause, is probably not the same thing I've gone to him about today. Not the same pressing issues. I think your symptoms evolve.

The biomedical discourse was drawn on to construct perimenopause as a complicated medical condition rather than a normal life transition. Georgia also described perimenopause as an experience that needs to be medically monitored and repeatedly assessed by medical professionals.

Additionally, the biomedical discourse was drawn on by the participants to construct perimenopause as something that can be treated with HRT. Some of the participants described talking with others about making HRT-related decisions. Many participants described consulting their doctors and engaging in medical monitoring to determine whether HRT was working for them. “Isla” said:

> I just started HRT this year. I'm keeping an eye on things to see, because I don't really know, you know, with the oestrogen, I don't really know how you're supposed to know if you need a higher dose or not. Like I'm still on the lowest dose, so. I think it's useful for having the discussions with my GP of like, you know, like I've already noticed the hot flashes are better.

Many participants drew on the biomedical discourse to construct perimenopause negatively, describing their interactions with medical professionals and their overall dissatisfaction with their doctors and the New Zealand health system. Often, these patients described failing to obtain a clear diagnosis and felt that their symptoms were not taken seriously by GPs.

Seeking a Diagnosis

Many participants, positioned as *dissatisfied patients*, pushed their doctors for a diagnosis of perimenopause. However, some women felt disappointment upon realising that perimenopause could not be easily diagnosed through a simple test. When hormonal tests were performed, some women stated that this did not achieve further clarity due to the regular fluctuations of female hormones throughout the day and month. This led these women to feel they had wasted their money and time, leaving them more unsure than when they arrived at the doctor’s clinic. “Georgia” said:

> Like everyone I've probably asked for a, you know, is there a test↑ Why is there not a test↑ How can we not know what's going on here↑ Like a few years ago, I did a saliva

test, I think. And then, you know, I couldn't really tell if how factually accurate that was going to be because it was just on one day and in the end it kind of felt like a bit of a waste of money.

Some participants drew on the biomedical discourse, positioning themselves as patients whose experiences were validated by their doctors. “Rose” said:

She said I'm definitely in perimenopause, as in…the gauge she was looking for with my hormone levels. But she said if it's above 20, you'll be in perimenopause and yours is 100. So you're definitely in perimenopause. And and so that was good. I just kind of wanted confirmation because last time I went about my irregular periods, which is probably two or three years ago, they did a blood test and the doctor rang me and said my oestrogen levels were very high, like higher than normal and totally normal. And I wasn't in perimenopause, and I did indeed get a period soon after that. So umm I was kind of in a way, felt validated by my blood test results this time actually being the same as my lived experience of I'm not having periods.

“Rose” described perimenopause as a measure of hormones. She drew on the biomedical discourse to construct perimenopause as a condition that is capable of being diagnosed with diagnostic testing. Additionally, she described her experiences being legitimised by her blood test results and described the authority that doctors and medical information can have in validating experiences.

Perimenopause Constructed Around Medical Uncertainty

Drawing on the biomedical discourse, the participants described perimenopause as an experience that held a lot of uncertainty. This uncertainty was often the women not knowing whether they were in perimenopause, whether a particular symptom was associated with perimenopause, whether what they were experiencing was ‘normal’, or whether a particular treatment option was right for them.

Medical Information Uncertainty. Many participants stated that a lot of medical information was readily available to them through news outlets, social media, health influencers, and medical institutions. Often, these various information streams and outlets were not aligned in the information and advice they gave on perimenopause. This misalignment created substantial uncertainty for the participants. Some of the participants described this experience as overwhelming and confusing, which instilled a lack of confidence in their understanding and sense-making in relation to perimenopause. “Sienna” said:

> I also read too much in the space, and so then I get kind of all the conflicting information, and it's yeah, kind of left going, I don't know who to trust, but I might just step back from some of these uncertain ones with unanswered questions.

Symptom Uncertainty. Many of the participants acknowledged that there were many well-known symptoms associated with the experience and clinical presentation of perimenopause, such as hot flushes, night sweats, brain fog, memory issues, and menstrual cycle changes. Some of the participants stated that other symptoms were less well-known and were not understood as being related to the perimenopausal transition. This created confusion around whether the experienced symptoms were connected to perimenopause or were the result of another medical issue. This uncertainty created a lot of angst and anxiety, with many of the participants often left feeling unsure whether the changes they were going through would be classified as ‘normal’. “Jessica” said:

> I feel like I'm in some kind of some kind of age-related decline, but not sure to what extent that is just temporary because it's you know, because of menopause or if it, and to what extent that will all get better later. And. Or just. Yeah. So I think the whole, the whole (.) whole experience has a lot of uncertainty around it for me. Because I hear that some people do feel like better after they get through the other side umm and, yeah. I

dunno, if that will be the case for me or not, with all the other things I have going on. So yeah, definitely uncertainty.

Treatment Uncertainty. Some participants described their perceptions and understanding of perimenopause treatment as something that contained substantial uncertainty. Firstly, this uncertainty surrounded the treatment dose they were on, with many women having questions as to whether their current dose was right for them. Secondly, they described uncertainty about whether the benefits of treatment outweighed the potential side effects. “Zoe” said:

> Yeah, that's where I'm leaning with the HRT, like maybe that's my next step, maybe I just… We've got to go down that road and see, but it's, it is the risks of associated with it. And what if it makes you worse↑ What if there's long term repercussions↑ So that's why I'm always really curious to hear how other people are going with it, and you know, research and stuff around it. But I'm still nervously sitting on the fence. Thinking should I shouldn't I↑.

Over the decades, there had been a lot of misinformation that had circulated around about HRT, which had contributed to negativity being tied to the treatment. “Trudy” said:

> I mean, it's probably a swing and a balance, right, because people like my mum's generation are really anti it because of that one study that, so yeah. So I feel like doctors now sort of have to re correct peoples knowledge about it because I just assumed it was bad until I went into several different doctors and they were like “ohh actually that study was discredited.

Perimenopause Dismissed by Medical Professionals

Many of the dissatisfied participants drew on the biomedical discourse to position themselves as *patients*; however, they believed that, as female patients, their perimenopausal experiences were not taken seriously by healthcare professionals. Instead, they were positioned

as the *dismissed patients*. These participants described their doctors as reluctant to prescribe HRT because the women failed to meet the strict criteria for receiving an HRT prescription. Instead, the doctors said the women were 'too young', or their symptoms were not severe enough to warrant a prescription for HRT. Often, participants described needing to advocate for themselves, which involved presenting the doctor with their own research and data collected by tracking their daily experiences to be taken seriously. When drawing on the biomedical discourse to position themselves as *dismissed patients*, many of the women used phrases such as "they don't believe you", "I'm not making this up", and the "doctor's just not listening to women". Additionally, some of the women described needing to "prove to these health professionals" that their experiences were valid, and, through being dismissed, feeling forced to "advocate for ourselves".

"Sadie" and "Sienna" felt they were dismissed by their doctors. "Sadie" said:

> You can't really kind of... And I also like to track things. I think that's kind of cool, and I like to know stuff and part of that is because I feel like Women's Health is just constantly neglected. So I feel like I have to have data and evidence to back up stuff if I'm going to go ask the doctor about something. And particularly now in perimenopause, I'm quite aware that that's an area that is completely under studied and under resourced in the medical fraternity, and so I'm like, I'm just gathering all my data to be able to at some point be take it to a medical professional and say here, look at this now do something about it and more than likely be fobbed off. But you know [laughter] I'll try.

Furthermore, Sadie highlighted that she thought men did not have to put in the same amount of work as women to be heard and recognised in the health space. She said:

> The labour that women do just in everyday life and then labour around health is not something that men experience. Certainly not the men I know. What would that be like

to not have to like fight for kind of every scrap of credibility when it comes to our own health↑ By having to keep these logbooks of information that reveal patterns. In order to show, to prove to our doctors that we're worth more than just, here's a new script for Panadol.

"Sienna" also described relating to what "Sadie" had said. "Siena" said, "I better start tracking because if I have to fight my case, I need to have my information already".

Racism and Weight Stigma. Some of the participants who drew on the biomedical discourse to position themselves as *dismissed patients* highlighted the negative interactions they have had with healthcare professionals in relation to racism and weight stigma. Some participants described needing to defend themselves and their embodied knowledge to their GPs. "Aroha" discussed the discrimination and racism she experienced from her healthcare practitioner, highlighting the assumptions that people had in relation to the colour of her skin. She said, "It's rage at the racism of it [laugh]…why because I'm brown, do you assume that I'm smoking and I'm overweight and I'm gonna get↑… It's fully attached to just the kind of the umm (.) the assumptions…" This extract highlighted how some women in New Zealand experience discrimination in healthcare settings, even when the issue they attended the doctors for is unrelated to factors such as smoking and weight.

Summary of the Biomedical Discourse

Using the biomedical discourse, the women positioned themselves as *patients* and *dismissed patients*. The *patient* was concerned about biological and psychological perimenopausal changes and symptoms, and their connection to diseases and chronic health issues. The *patient* was receptive to HRT treatment and sought a diagnosis from medical professionals. The discourse that perimenopause was a disease and required medical attention, and that perimenopausal women were patients, was articulated by those positioning themselves as *patients*. According to Hvas and Gannik (2008a), medical professionals were considered to

hold the highest level of expertise when it came to perimenopause and perimenopausal women's bodies. This was evident among many participants, who valued the opinions and advice of medical professionals and sought validation from their doctor. Additionally, most participants in this positioning were largely focused on the impact of their symptoms, with less consideration of aspects of their social and cultural context that may have been affecting them.

Additionally, some participants positioned themselves as *dismissed patients* who were ignored, brushed off, and not taken seriously by medical professionals. Overall, the *dismissed patient* was not happy with the way she was being treated within the healthcare system. Through this subject position, the women were trying to convince the doctor that their presenting perimenopause symptoms required attention and needed treatment.

Discourse Two: The Natural Discourse

Introducing the Natural Discourse

The natural discourse, also known as the alternative discourse, has been identified in the academic literature and discussed by numerous scholars (Hvas & Gannik, 2008b; Hyde et al., 2010; Krajewski, 2019a; Loppie & Keddy, 2002). As an alternative to the biomedical discourse that frames perimenopause as a hormone deficiency disease, the natural discourse tends to construct perimenopause as a natural life transition (Sergeant & Rizq, 2017). The natural discourse frames perimenopause as an experience that can be supported by non-medical interventions, such as herbal medicines and acupuncture, and medicines such as HRT should be avoided due to their unpredictable and toxic effects (Hvas & Gannik, 2008a). In the natural discourse, perimenopause is generally viewed more positively, with perimenopause marking a new phase of life to be celebrated, say Hvas and Gannik.

How the Participants Used the Natural Discourse to Construct Perimenopause

Many of the women in the study used the natural discourse to construct their experiences of perimenopause. Some participants utilised the natural discourse as a form of

resistance to the biomedical discourse. Instead of being positioned as *patients*, by using natural discourse, the women positioned themselves as individuals who view perimenopause as a natural life transition that did not require medical support. The women who used this discourse talked about not wanting or needing the support of pharmaceutical intervention or HRT. They spoke of wanting to deal with the life transition naturally and the acceptance of perimenopause-related changes. When using the natural discourse to describe perimenopause, the participants used words and phrases such as "natural" and "naturally"; "holistic" and "holistically"; "life stage"; and "normal phase of life". Additionally, some of the women used phrases such as "come to know myself in this new way", "get through this without any other medication", "do it all naturally", and "this is just a natural process" when using the natural discourse to describe their experience with perimenopause.

Resisting the Medical Industry and Pharmaceutical Intervention. Some participants used the natural discourse to express their resistance to the dominant biomedical construction of perimenopause. Instead, the women described perimenopause as an experience that can be managed in natural ways, stating their preference against the use of HRT. Additionally, some of the women communicated their overall lack of support for the pharmaceutical industry, particularly for the management of perimenopause. "Beth" and "MJ" were two women who were both a part of the chronic illness group of the study, and often used the natural discourse to discuss their experiences of perimenopause in relation to their resistance to HRT and pharmaceutical interventions. "Beth" described being excited about this research project, as it allowed for MTAs to be looked at from a different perspective, one that is not commercial or medical.

"Beth" described being concerned about some of the symptoms that can accompany perimenopause, such as an overall deterioration in quality of life. Despite these concerns, she used the natural discourse to position herself as a woman who is connected with nature in many

areas of her life, which also flowed on to her management of perimenopause and perimenopausal symptoms. When asked if she was looking forward to perimenopause, she said:

> Umm Neutral. I I guess I'm a little bit worried about… I don't know, being even more absent minded as I age. Is this just the beginning of a sort of a deterioration for the rest of my life or, or is this sort of scatterbrained quality a temporary transition into a more stable mental state. Yeah, but I I wouldn't want to take any medication to manage any symptoms it just is what it is and we just roll with it.

Following this, "Beth" was also asked why she wouldn't want to take medication. She responded with:

> I don't trust pharmaceutical companies. Practically every area of my life is connected with nature that. If I am meant to sort of have a fitful sleeps, I just plan my days around being tired that day. It's it's not a problem. Unmm I was on mild antidepressants about ohh it's been 12 years ago and for the few months that I took them I lost the capacity, the capacity to remember my dreams when I woke up in the morning and I've never regained that, that it's like, that killed a part of my connection with my subconscious.

"Beth" used the natural discourse to discuss her beliefs about the pharmaceutical industry and pharmaceutical interventions, which evidently flowed into her views on the management of perimenopause.

Managing Perimenopausal Experiences Naturally. Through the discussion of the practice of tracking symptoms using MTAs, "MJ" described how she believed that she was capable of managing her symptoms of perimenopause naturally. She stated that through keeping track of her symptoms, behaviours, emotions, and activity, she was then able to look at patterns that occurred during perimenopause. "MJ" said:

> Yeah, because I also have a like, I think we mentioned at the start, I have a chronic health condition. And so tracking my symptoms for that is important as well. So maybe it's already just a bit of a natural way of of managing my body is to keep track of it every day.

Due to "MJ's" chronic illness history, she was familiar with tracking symptoms and bodily changes, and the practice of managing the body naturally. Evidently, she placed importance on keeping track of her symptoms every day and described the practice of tracking as a natural way to manage her body.

"Mere" also described her perspective on perimenopause, drawing on the natural discourse, having stated that she would only look at using HRT as a last resort, and instead would prefer natural methods of managing her journey. She said:

> If I can shove it in my mouth and it tastes good and it's, pretend it's food instead of just like a little thing, then I'm more open to doing it that way then uhh (.) rubbing stuff on my skin for the hormones to seep through. Like I, like if it comes down to it, that's what I'll do. I'll do hormone replacement therapy, but, I don't want to have to. I want to find other ways of doing it before… That's like the last ditch, pretty much.

In "Mere's" case, the natural discourse was drawn on to construct natural remedies as preferred in relation to pharmaceutical options.

Perimenopause Celebrated as a Natural Life Stage. Some women drew on the natural discourse to describe perimenopause as a positive change, a natural change to be celebrated for various reasons. For example, "MJ" described perimenopause as a life stage that she was excited for, as shown in this quote:

> I've never wanted to have kids and have, like, been avoiding that my whole life. And it's been very expensive and sometimes painful and messy and I'm really looking forward to that not being a problem like having children is not a huge part of my

> sexuality and I wish I genuinely did have the choice at the moment umm I have the choice to not have them, but I still have to manage having a body that wants them. So I got my tubes tied some years ago when I accidentally got pregnant and had to have a termination, and so the whole thing has just been like I wish I didn't have to do any of this. So when the menopause gets here, I'm so excited to be the MJ I was before I started getting my period. I feel like I will be genuinely me without a hormonal interference and I'm really, really excited for it.

"Trudy" also described perimenopause and menopause as a natural experience, and a change that should be embraced. She said:

> But you also want to lean into 'this is just a normal stage in life, and it's like going through second puberty. And how do I come to know myself in this new way as a crone or a hag or whatever' [laughing].

This extract communicated that "Trudy" views perimenopause similarly to how she views puberty; they are both periods of someone's life where large changes occur, however, these changes are normal, should be expected and inevitable. In her final comment, she also nods to feminist constructions of older women as resisting negative stereotypes by repositioning crones as figures of wisdom, freedom, and personal power.

Some women also drew on the natural discourse to highlight how a lot of shame and embarrassment continue to surround the topic of perimenopause, restricting open conversations at home, in the workplace, and in social environments. "Rita" used the natural discourse to construct perimenopause as something that needs to be openly discussed and normalised. She said:

> Yeah, I find myself, you know, saying things about menopause in front of you know, kind of our our female students that are, you know, in their 20s and things and they look at you kind of horrified because they don't know quite what to say. But you know, just

> trying to normalise that, this is just a a life stage and you know it's umm it's coming for all of us [laughing] And it should be normal to be able to talk about and. And yeah, yeah. I'm hoping that, you know, that kind of horrified response will kind of become less over time as as it's just normal, yeah.

Using the natural discourse, "Rita" stated that perimenopause is an experience that all women will go through and a life stage that all women will reach one day. She noted that framing perimenopause in this way will allow for a more open discussion of experiences.

A few participants also used natural discourse when discussing their understandings of the Indigenous perspectives of perimenopause. "Beth" talked about the connection between Māori culture and perimenopause. Particularly, how in this culture, perimenopause is viewed as a positive life transition, which is the opposite of how perimenopause is commonly viewed in Western cultures, with ageing women being constructed negatively and generally losing respect. In Māori culture, women who are in perimenopause, menopause, or are post-menopausal hold greater wisdom than younger women and, as a result, gain more respect. She said:

> There was a a sense of menopause being natural. That was just like, [exhales] ah yes. And a transition into a position of umm sort of greater respect that comes with age and wisdom. And there was something else that was about having more energy to (.) grandparent that I'd never seen that before.

Summary of the Natural Discourse

The women most commonly used the natural discourse when resisting the dominant biomedical construction of perimenopause. They spoke about their concerns surrounding HRT, and their reluctance to be on HRT, often stating that they would never want to take any medication or would use it as a last resort.

The participants used the natural discourse to position themselves as *naturally managing women*. Through the natural discourse, they were positioned as women who would use many measures to help manage perimenopause, such as new exercise regimes, changing their diets, or getting more sleep, as long as they considered these measures natural ways of coping. Positioning themselves as *naturally managing women* also meant that they resisted the assistance of the medical and pharmaceutical industry, by instead trying to make lifestyle changes that allow for the better management and control over perimenopausal symptoms.

The natural discourse was also used to construct menopause as a normal life stage, often to be celebrated for the freedoms and positive changes it offered. Women who drew on the natural discourse in this way constructed perimenopause as a life stage that should be normalised through greater public dialogue and open conversations.

Discourse Three: The Neoliberal Discourse

Introducing the Neoliberal Discourse

Neoliberalism is not a new concept; the neoliberal discourse and neoliberal framework have been a topic of discussion by academic scholars for many years (Goswami & Cherrier, 2025; Orgad & Rottenberg, 2024; Rottenberg & Gilchrist, 2024), with many interested in how neoliberal discourse constructs the experience of perimenopause and how women thought and talked about themselves. The neoliberal discourse constructs the individual as autonomous and independent, and as someone solely responsible for the outcomes of their behaviours and choices (Goswami & Cherrier, 2025). Through neoliberal governance, people are strongly encouraged or forced to position themselves as the *responsible citizen*, who carries the responsibility of maintaining both personal and societal wellbeing, encompassing overall health, sustainability, poverty and environmental well-being (Anderson et al., 2016).

The neoliberal discourse constructs perimenopause as a process of individual health management and engagement with wellbeing practices, with the individual's end goal being

self-improvement (Calvin et al., 2026). From a neoliberal perspective, the ageing woman's body is required to minimise the effects of ageing and is pressured to maintain youth and beauty (Steffan, 2021). Steffan said that the association between ageing and weight gain, grey hair, worsened posture, and sagged and wrinkled skin is more closely linked to women than to men, with beauty and youthfulness seen as interlinked. Additionally, due to an ageing appearance, women are understood to be subject to greater social marginalisation, negative social outcomes, and gendered ageism (Steffan, 2021).

Advertising and marketing are significant contributors to the socially constructed connection between youth and beauty, often constructing perimenopause within this neoliberal framework (Orgad & Gilchrist, 2025). Orgad and Gilchrist highlighted how advertisements from the 1960s for oestrogen treatment constructed women as a problem and burden to men, emphasising that if women took this one pill, they would become easy to live with again. It is through this construction of women that certain subjectivities were produced, positioning many as women who need to be self-regulating and individually responsible for their well-being and ageing. Building on this, to achieve individual responsibility for their perimenopausal bodies, women are expected to engage in self-surveillance and bodily governance. MTAs are relevant to self-surveillance and bodily governance because they serve as platforms that encourage women to track, monitor, and manage their bodies.

Additionally, the neoliberal discourse is often drawn on to construct perimenopause as an opportunity for commercial and financial gain, with perimenopausal women positioned as *the product*. The *menopause market* refers to a range of products, solutions, and services marketed to address the negative experiences and symptoms associated with perimenopause (Onculer & Onculer Yayalar, 2025). Through neoliberal discourse, women feel responsible for managing their perimenopausal experiences, and are expected to optimise and control their bodies through consumption.

Individual Responsibility

The neoliberal discourse was used by the current participants to construct perimenopause as a life event that women are individually responsible for, with accountability being placed on women to control and manage their perimenopausal bodies. Many of the participants used the neoliberal discourse to describe how they felt personally responsible for their health and the management of their bodies as they transitioned through perimenopause. The words and phrases that were said when using the neoliberal discourse to describe individual responsibility included, “pressure”; “I always forget”; “managing my body”; “I ought to be learning”; “look after myself better”; “take a large amount of responsibility for my health”; “trying to take ownership of monitoring myself and my symptoms”. As constructed within the neoliberal discourse, individual responsibility is morally pressuring. Some participants described feeling pressure to maintain individual responsibility, and when they felt they were failing in that regard, they felt the blame. This was seen in this extract from “Sienna”: “Well, if I could just listen to my body properly, I'd be able to prevent everything”. In this statement, she constructed herself as a woman who has failed to carefully monitor her body, consequently taking the blame.

Many of the participants described the responsibility they felt to monitor their bodies and individually manage their perimenopausal experiences better. “Ashley” said:

> I am intentionally capturing this. I am intentionally monitoring or recording all this so I can monitor myself… Linking the the triggers to the symptoms is is really helpful because… Yeah, especially when I'm hyper vigilant when I'm shitty. Being able to measure the level of of impact that the different things are having on me, giving me that perspective, just for me personally because I'm you know, I'm trying to manage my responses to everybody so that I can be a kinder person to be around.

In this statement, “Ashley” described her body as a project site that needs to be carefully managed from many angles as she engaged in constant self-surveillance. She also noted that her reason for collecting data on her experiences is self-improvement, stating that she wants to be a kinder person. She positioned herself using the neoliberal discourse, as a *responsible woman*, with expectations placed on her both personally and more broadly to successfully manage and control her body to avoid negative interactions with others.

The perimenopausal woman’s body was also described as a site that should be individually controlled and managed by “Rose”. She drew on the neoliberal discourse to construct weight loss and her body as a self-improvement project. She said:

> I'm trying to lose weight at the moment and you know, get fitter and everything. So I thought I might just see how I go over the next three to six months and sort of give myself... She wasn't, she was very much on the fence herself about the statin. And so I thought I'd give myself the next three to six months, see how I get on with fitness and weight loss. I’ll get levels checked again and cholesterol and see where that's at and if it's much the same then I will go on a statin. But if I can improve it through lifestyle then I might buy myself an extra couple of years, perhaps without needing it.

This statement demonstrated the personal responsibility she placed on herself during the perimenopausal stage to become fitter and healthier, and to avoid going on prescription medication. The neoliberal discourse frames management of the perimenopausal body as an individualised burden and self-managed obligation.

Self-Surveillance

The participants described self-surveillance using neoliberal discourse, through talking about the assessment of their bodies, which often involved tracking and monitoring their experiences. Many participants collected data on their bodies and how they were changing, building a dataset based on their bodies’ functioning. The words and phrases that were often

used by the participants when using the neoliberal discourse to talk about their self-surveillance included “monitor”, “manage”, “plan accordingly”, “tracking”, “keeping data”, “tracking my symptoms”, “logging my symptoms”, and “I should log this”. The neoliberal discourse was used by some of the participants to position themselves as self-managing, with these women wanting to appear as though they are capable of managing perimenopause without external support.

A few participants talked about tracking their symptoms to manage their bodies naturally, without hormonal treatment. Many of these women looked for patterns in the data and used the gathered information to make informed life-improvement changes, as someone responsible for their health would. An example of this was seen from “MJ”, she said, “I've always liked tracking things and keeping data and keeping stats because well then I can make like valuable changes in my life, even if there are only small ones↑”. Using neoliberal discourse, the perimenopausal body was constructed as something that should be carefully monitored for continuous self-improvement to be achieved.

Other participants engaged in self-surveillance to better understand their changing bodies. “Zoe” described looking back through previous months of data, interested in whether her symptoms and emotions were a regular occurrence or a one-off. She said:

> I think it's the data for me and symptoms and to be able to look back month by month and go “ohh look, there's a pattern here” and I you know like at this time every month I am getting really growly or tired or you know my my bones are hurting or whatever it is and go OK there's, you know. It's not just a one-off thing because I didn’t have enough sleep or something. That's actually something that's happening every week, and explain it a bit.

“Zoe” constructed the perimenopausal body as something that needed to be understood and explained, seeking justification for changes that are happening as a woman ages.

Many participants described their use of MTAs, to support their engagement in self-surveilling behaviours. “Grace” said:

> I do use the app sort of just to know when I'm due and what I might be doing around that time and planning my mood and my stresses and triggers and that sort of thing [laughing]. And and yeah, as I said regarding the the perimenopause, as I said, I'm fairly sure the last couple of years I've may have started, I'm not sure. And so I'm sort of monitoring occasional cramps or random pains that occur. It might just be related perimenopause it might be a health issue, it might be my period like I don't know.

In this statement, “Grace” referred to her body as a personal project, as a site that needs to be monitored to gather data that can be analysed. Using the neoliberal discourse, she positioned herself as a *responsible woman*, engaging in self-surveillance to anticipate and control future moods and triggers.

Resisting the Neoliberal Discourse

The Neoliberal discourse was resisted by many of the participants, with these participants emphasising the role of the system, rejecting the idea that they needed to be individually responsible for their perimenopausal experiences. The phrases used to describe this included, “the system is stacked against them”; “bless the health system for trying”; “we’re part of these bigger systems”; “understand the bigger system you are in”; “we don’t have a healthcare system that values us enough”. Many participants in resisting the neoliberal discourse also resisted the social and cultural pressures forced on women to manage ageing.

“MJ” resisted the neoliberal discourse by making a joke to the group about the expectations held for women to ‘age well’ through perimenopause. She said:

> But I hear what you're saying you you the whole should do this if you're, if you’re going to do perimenopause then you should do it to the best of your ability [all laughing]. You know all that kind of ya ya that's been put on women for years…

In this statement, "MJ" discussed the neoliberal expectations placed on women to 'successfully' navigate this life stage. She actively resisted the neoliberal discourse, illegitimising these expectations and labelling them as "ya ya". Through her resistance to the neoliberal discourse, she positioned herself as a *self-accepting woman* who does not feel pressured to uphold society's expectations.

"Trudy" and "Rita" also acknowledged the pressure placed on perimenopausal women, which is circulated through neoliberal discourse to maintain their youth, fitness, and beauty as they age. "Rita" said:

> There's all these pictures of young, fit women doing stuff, and like, you know, it just. And I was like, uh, I just can't cope with this, you know, like it it sometimes I look at these things and it just doesn't feel like it (.) is me↑ or it's just like, oh my God, too much pressure to kind of look at all these pictures of you know what it's, what you're supposed to be doing.

"Rita" described the expectations placed on ageing women as pressure-inducing, particularly when women believed they no longer met the beauty standard of being young and fit. "Trudy" described pressure more broadly as the expectations placed on women to maintain their youthful appearance across the lifespan. She said:

> But my mum is very petite, very tanned, very blonde, very fashionable. Like, yeah, she's got chronic health issues. So I wouldn't say she's ageing well in that sense, but umm and I guess in some ways I'd define myself in opposition to that, while also feeling the pressure to be that [laughing].

"Rita" and "Trudy" both resisted neoliberal expectations by expressing that these expectations are not aligned with their identities, feeling external pressure, yet not being victims of it, and positioning themselves as *self-accepting women*.

Many of the participants also highlighted how perimenopause, particularly the negative perimenopausal changes, had become a marketing and money-making opportunity for many companies and organisations. These companies and organisations advertised so-called 'solutions' to perimenopause, which were often resisted by the current participants. Many of the women described being wary of the way perimenopausal women can be socially constructed as vulnerable and in desperate need of help and support. The words that were used by the women to resist *perimenopause as the product* included, "advertising" and "advertisement"; "funds" and "funding"; "commercialisation"; "marketed", "marketing", and "target market"; "clickbait"; "profit" and "profiting"; "product"; and "sell" and "selling". Additionally, some of the phrases that were used to also describe perimenopause in this way included, "if something is free, then you're the product"; "just trying to sell me things"; "probably costs me money"; and "make money out of you".

A good example of resisting *perimenopause as the product* was described by "Beth". She said:

> I have been thinking about the commercialisation of perimenopause. And there's almost sort of a pressure to understand our bodies to eat correctly and exercise correctly to stay fitter and healthy for longer, that there's part of me sort of like well, emm (.) I don't want to take any medication. I I want to be fit and healthy as long as possible, but maybe I ought to be learning about a different form of exercise to look after myself better, but very wary about getting emm, sort of like sucked into someone's exercise programme because they claim to know about perimenopause, yeah.

In this statement, "Beth" rejected the external pressures placed on women in neoliberal society to constantly engage in health-promoting behaviours, such as exercise and healthy eating. Additionally, she described needing to be cautious of companies that try to profit from perimenopausal women who feel pressured to involve themselves in neoliberal health-

responsible behaviours. She resisted the framing of *perimenopause as the product*, positioning herself as a *resister* to the 'responsible neoliberal woman' who is expected to engage in self-optimisation through consumption.

Many of the women described wanting to improve their health and diet throughout perimenopause; however, they felt companies were providing education, trying to make a profit from the perimenopausal women's vulnerable positioning and lack of knowledge. "Beth" resisted the 'perimenopause market', stating that it would be more helpful to understand the science-backed benefits that have been researched, rather than purchasing someone's programme that aims to profit from perimenopausal women. She said:

> I think I would also like to know who the chefs are that are coming up with recipes that would be really useful, not not to sell their nutritional programme but to go find you know cookbooks or ingredients and then link to science based, you know, like studies on why that particular food is important. Umm. Yeah and and I kind of feel like it could be beneficial to normalise the conversation. In a wider cultural context. So that you can actually find a yoga instructor who knows about perimenopause.

"Beth" described perimenopause as something that is not normalised enough, which can result in unscientific businesses targeting perimenopausal women for profit who internalise the neoliberal discourse and believe that their health is their personal responsibility.

Summary of the Neoliberal Discourse

The participants drew on the neoliberal discourse to construct perimenopause as a journey they are individually responsible for. Many of the women described their engagement with self-surveillance and body monitoring behaviours, using the neoliberal discourse to position themselves as *responsible women*. Several participants also resisted the neoliberal discourse, rejecting personal responsibility and the socio-cultural expectations placed on women to 'age well', which positioned them as *self-accepting women*. A few participants also

resisted the neoliberal framing of perimenopause as a marketing opportunity that businesses can profit from, positioning themselves as *resisters* to the 'responsible neoliberal woman' who is pressured to self-optimise through consumption.

Discourse Four: The 'Forever Young' Discourse

Introducing the 'Forever Young' Discourse

The 'forever young' discourse is not new and has been a discourse used to construct ageing women and perimenopause for some time. Hvas and Gannik (2008b) identified the 'forever young' discourse in their research, describing it as one that constructs youthfulness as admirable, with older people seen as invisible. This discourse constructs perimenopause and menopause as negative milestones of the lifelong ageing process (Hvas & Gannik, 2008b). The 'forever young' discourse constructs perimenopause as something that should be hidden, by minimising the physical signs of ageing by engaging with plastic surgery, beauty treatments, and makeup, said Hvas and Gannik.

Perimenopause and menopause are significant gendered markers of ageing and life stage progression (van de Wiel, 2014). The social construction of perimenopause and menopause as negative markers of ageing stems back to the Freudian era of the late 1800s to the early 1900s, with Freud making the bold statement that "women often alter strangely in character after they have abandoned their genital functions. They become quarrelsome, peevish, and argumentative, petty and miserly; in fact they display sadistic and anal-erotic traits which were not theirs in the era of womanliness" (Segal, 2007, pp. 13–14).

In addition, Erik Erikson is a major theorist who endorsed Freud's ideas, stating that women should base their worth and identity on their ability to reproduce and be mothers (M. M. Gergen, 1990). Based on patriarchal stereotypes and society's expectations of ageing women, many women are led to believe this statement to be true. The 'forever young' discourse supports this perspective, constructing perimenopause as a loss or decline of fertility, youth,

and childbearing abilities. Unsurprisingly, many women, when reaching perimenopause, struggle with their self-worth and identity. The arrival of perimenopause can disrupt a previously steady identity, with women being led to believe through societal expectations that their self-worth is measured based on their youth, fertility, and sexual attractiveness (Singer & Hunter, 1999). Women throughout history have felt pressure to maintain a youthful appearance and look 'good for their age', as seen in prominent figures such as *Cleopatra*, who bathed in donkey milk to keep her skin looking 'young' (Fife, 2024). Fife said that older men are viewed more positively, with labels such as 'silver fox', which contrasts sharply with the labels and stereotypes that ageing women receive, such as 'hag', 'crone', and 'old bag'.

Using the 'forever young' discourse, participants positioned themselves as *declining women* or, by resisting it, as *liberated women*. When positioned as *declining women*, perimenopause was talked about as a decline, as a disruption to a person's identity, and a loss of fertility and reproductive functioning. Alternatively, when positioned as *liberated women*, perimenopause was described as a positive, transformative period, resisting the 'forever young' discourse. Perimenopause is instead seen as a time of greater opportunity to embrace different life roles, feeling more confident, competent, and experienced (Hvas, 2023).

Perimenopause as a Decline

When using the 'forever young' discourse to construct perimenopause as a decline, the participants would use the words and phrases of "decline" and "declining"; "my body's ageing too"; "crone age"; "age-related decline"; "broken"; "doddery old woman"; "it's all downhill from there"; "not in her prime of youth"; "deterioration"; "I used to sleep very well"; "brain changes"; "brain fog"; "getting forgetful"; "scatterbrained"; "losing my mind"; "wrinkles"; "weight gain"; and "invisible".

Many of the participants described perimenopause as an experience of decline, sharing concerns around the cognitive changes and brain fog that can happen alongside perimenopause.

Some participants also expressed concern about cognitive decline affecting their families, relationships, and occupations. “Anne” said:

> You read a lot of information about women who emm are in their careers and doing well. And then the next minute, you know, they can't think clearly. And, you know, they're losing their shit all the time. And then they leave really good jobs when technically, we should be now at a point in our mid 40s where emm you know if you've had kids, your kids are probably probably of an age now where you can focus on your work. This is probably as good as it gets time wise and now your body tells you [laughing] that your brain is in some crazy ass space and now you can't be as productive as you want to be at work. And I've heard about people quitting and worst case scenarios, things like suicide and all of that stuff I'm aware of and a bit like Caro, it's like (.) how do I ensure I get the help at exactly the right point that I haven't and ended up doing something stupid in my job or really irritating my own husband off and he wants to divorce me…

In this statement, “Anne” highlighted how the ‘forever young’ discourse is also circulated through publicly available information sources, constructing the experience of perimenopause as a cognitive decline that affects how women deal with things in the work environment. She also shared this belief, communicating that she needs to seek external help, otherwise she may be at risk of losing her marriage or job. Through this statement, “Anne” was positioned as a *declining woman*. The perimenopausal woman was described as becoming incapable of appropriately handling situations and becoming emotionally volatile, unreliable, and unproductive.

Perimenopause as a Disruption to Identity

When using the ‘forever young’ discourse to construct perimenopause as a disruption to identity, the participants would use the words and phrases of “losing control”; “shock”;

“unpredictable”; “all of a sudden I was not typical”; “sudden menopause”; “all of a sudden I was questioning everything about my body”; “chaos”; and “affect my sense of self”.

Many of the participants described the arrival of perimenopause as disruptive, resulting in turbulence to their previously stable sense of self. “Rose” described the arrival of perimenopause as a shock, with perimenopause affecting her identity. She said:

> It was a shock. And and it affects your identity. Because for 2 and half decades I was someone that had very regular, predictable periods that were kind of textbook. You know, if you read in a textbook, periods should last for five to seven days and they will be heavier on day two and then they will lighten and and you may, you may get some mild cramping sometimes. I I literally was the kind of textbook for the very, very normal, typical period. Everything was moderate and predictable and normal and regular.

In this statement, “Rose” described her menstrual period as being an important aspect of her identity before perimenopause, especially as she considered herself to be ‘normal’ and ‘predictable’.

“MJ” described her struggle to accept that her body had gone through the physical changes of perimenopause, having faced a dilemma between the perimenopausal woman she is now and the fertile woman she was before reaching perimenopause. She said:

> As soon as I saw that I was late, I immediately was like “Ohh God, wouldn't it just so bloody typical that I'd be 45 and get accidentally pregnant” and stuff and started having that thought and then I thought, “Oh no. Oh no, it's actually more likely now that I I might be starting the menopause than being pregnant, you know, like, whoa, we made it” [laughing]. But then I got my period three days later so. But it's interesting how it takes quite a long time for your mind to ehh realise that your body has changed. You know that I'm in a different situation now, physically.

In this statement, perimenopause was described as something that takes time to accept, signifying an end to the reproductive life stage. “MJ’s” previous identity as someone who could previously bear children was disrupted, with her thinking patterns still aligning with someone who can become pregnant. Her statement of “whoa, we made it” demonstrated that she viewed perimenopause as something that is achieved when someone is no longer ‘young’, marking a life-stage milestone.

Perimenopause as a Loss of Fertility and Reproduction

When using the ‘forever young’ discourse to construct perimenopause as loss of fertility and reproduction, the current participants would use the words and phrases including, “reproductive prime years”; “finishing reproduction”; “loss of your fertility”; “health equals fertility”; “ideal woman as being female”; “hormonal age”; “losing your period”; “losing your oestrogen”; “I’m too young”, “I thought I was too young to be in perimenopause”; “fertile window”; “something you’re never going to experience”; “grieve” and “grieving”; “experience grief”; and “mourning”.

Many of the participants expressed the sadness and grief they felt as they reached perimenopause and came to the realisation that they can no longer have children. “Georgia” said:

> Some days it's really hard for me that like, I don't have kids and she's like, you well you never wanted kids. And I'm like, well, yeah, but some days, you know, like, I know that that's not happening, you know, so you go... Just because you made that decision and now you're kind of don't really have that ahead of you now and you know that for sure. You know, like that we just you grieve for something that you're never going to experience and I think that's probably more… not front of mind, but that comes up for me more in the recent past, whereas, you know, I've been married for about 11 years, you know, that ship sailed a while ago for me, for us, you know↑ So why is it a problem

now. You know, maybe it's because my parents are getting older and you're thinking about the next generation…

Based on this statement, “Georgia” shared the grief she felt when reaching perimenopause for the loss of the potential to be a mother, even when she did not desire to become one. The arrival of perimenopause is confronting as it symbolises a loss of youth, opportunity, and the end of the reproductive chapter.

A few of the participants described the journey they went through upon realising they regularly menstruated and ovulated and no longer had the possibility of becoming pregnant. Her acceptance of the perimenopausal-related changes happening to her body was a greater challenge to accept due to being categorised as ‘too young’ to be perimenopausal. “Rose” said:

> And so in my identity, I was someone who's been very fortunate and typical with Women's Health things. And then all of a sudden I was not typical. And I'm a lot younger. I'm the youngest person I know of my friends who is experiencing this. And I wasn't, I was one of the slightly older ones, sort of normal to slightly older to get my period, I was 13 and half. And my friends were getting it between 10 and 12, but 13 and a half also isn't late. It's not “go to the doctor” late. You know, “what's going on↑” So I didn't expect… And my mum and my sisters were all in the early 50s, so I didn't expect this to happen early to me. So it has been a shock, for all of all those reasons that has been a shock. And it took me a lot to get my head around that. There was a change happening to me and it wasn't, it wasn't pregnancy, I just, the, I wasted a lot of money on pregnancy tests that first couple of years. Thinking, keeping on thinking I must be pregnant even though my husband had had a vasectomy. Super unlikely. But in my mind, I couldn't. I just couldn't fathom why I wasn't having a period if it wasn't relating to pregnancy.

“Rose” stated that she found her new perimenopausal identity difficult to accept, as it didn’t meet her expectations around the ‘normal’ age to begin perimenopause. She expressed that she wasted a lot of money on pregnancy tests and time thinking that she was pregnant, despite this being medically impossible. This indicated that she held on to her reproductive identity, despite her body showing clear signs of perimenopause.

“Rita” and “Zoe” also expressed the discomfort and embarrassment connected to perimenopause and becoming older. “Rita” said, “I think some women feel shame about it... It's kind of this end of our, you know, reproductive and and you know, kind of womanly lives and and and so people don't talk about it”. In this statement, “Rita” made an association between reproduction and being a woman. The ‘forever young’ discourse was drawn on here to construct perimenopause as an endpoint where femininity and youthfulness are lost. “Zoe” also expressed discomfort around the idea of becoming ‘old’. She said:

> I think maybe my friend group is just starting to go through this and so and you know, I was like the first one to get married the first one to have kids and it turns out probably the first one to go through perimenopause. So that's been a little bit challenging because it does make you feel old in a way, you think you know. Like they're all still quite young and like Georgia what you're saying about grieving for not having kids. I think for me it's been a bit the same even though I've got my three kids and then when I thought that I was pregnant because I didn’t have a period for so long and then you’re like, oh no, it's just that I'm getting older and then it, that was a bit confronting…

“Zoe” expressed how perimenopause has been disruptive to her identity, especially as she has reached this life stage prematurely before the rest of her friend group. She made a comparison between her friends being young and herself, as someone who is perimenopausal and feels old. She described her younger friends more positively than herself, whom she views

as older. She drew on the ‘forever young’ discourse to construct perimenopause as the end of youth, and as a stage that is looked at less fondly than the younger years of her life.

Resistance of the ‘Forever Young’ Discourse

When some of the participants resisted the ‘forever young’ discourse, they described perimenopause as a positive new life stage that can be liberating and empowering. The participants who described perimenopause in this way were positioned as *liberated women*. When resisting the ‘forever young’ discourse, the words and phrases that were used included, “ageing well”; “wisdom”; “freeing” and “freedom”; “empowering” and “empowerment”; “I’m really looking forward to it”; “I will be genuinely me without a hormonal interference”; “greater respect”; “it does make you stronger”; “becoming crone”; “space crone”; and “rite of passage”.

A few of the participants expressed how their perimenopausal experiences had changed them in a positive way. “MJ” said:

> I am loving the lack of male gaze from being older. I think that ties in to losing your period, going through the menopause as well. You go into what do they call it, the Crone Age [laughing]. Wisdom. Here we come. Yeah, I'm really looking forward to it and I'm really enjoying owning my own body for myself. It's like you get grey hair and you turn 40 and you, I don't know, I've almost felt that male gaze fall away and it has been so freeing because now I just get on my bike and ride around and have a fun time. And I don't worry about my hair and my nails or any of that kind of thing anymore. I've completely forgotten the question [laughter], but just that I get yeah, like it it's changed me, but in a really positive way.

Through this statement, “MJ” resisted the common framing of perimenopause as a decline and instead framed it as a time when women can be free from the societal expectations

that are held against women. She continues to see herself as worthy, resisting the 'forever young' discourse that constructs ageing as undesirable and unattractive.

A few participants resisted the 'forever young' discourse by describing how they have gained strength and confidence in accepting their perimenopausal identity, less concerned with what other people think, unlike in their younger years. "Rose" described noticing a sudden change in how she conducts herself in her interactions with other people. She stated:

> I've always had a personality where umm particularly with friends or patients or coworkers, that I would want to sort of keep the peace, be the first to apologise, be the first to fall on my sword, the first to sort of, you know, pacify, others apologise to others. Just, you know, turn the other cheek if someone wronged me, all that sort of thing. That has massively changed in the last year.

In this statement, "Rose" referred to herself as someone who is no longer worried about keeping the peace. She positioned herself as a 'liberated woman' by resisting the 'forever young' discourse, instead constructing perimenopause as a time where women are no longer expected to apologise and avoid conflict.

"Trudy" also expressed a shift in her identity, relating to her personality and how she deals with people, positioning herself as a *liberated woman*. She said:

> I'm usually focused on what other people are feeling and what other people are doing and trying to mould myself around their needs. And I felt like this process of starting menopause and umm (,) having problems in my body has sort of woken me up to the fact, to that fact. I mean, I kind of knew it already but it has woken me up to that. I actually can't keep doing that and (.) be OK and be healthy. And so this, yeah, kind of getting in touch is a bit more about getting in touch with, well, "who am I and what do I want↑.

"Trudy" resisted the 'forever young' discourse to construct perimenopause as a life stage in which new boundaries are set, and expectations are shifted. Additionally, through resistance of the 'forever young' discourse, perimenopause and growing older were constructed as a self-improvement journey that creates spaces for self-reflection and reconsiderations of personal wants and desires.

"Mable" resisted the 'forever young' discourse by expressing that she gets frustrated with women who use their perimenopausal experiences as an excuse. She said:

> Like twice this week already I've had colleagues say to me "Ohh, I'm sorry, it's just my menopausal brain". And I swear. That really pisses me off." She also went on to say "I just I find that really annoying and I know everybody's circumstances are quite different and things, but it was that, it was, it was the excuse kind of throwing that annoyed me, I think because feminist wise it's like… I don't know, it just adds more fuel to the the weak woman fire, I guess. Or the incapable or can't be trusted to, or, you know, just all of those things. So I think that's, that's where those sorts of comments really annoy me.

"Mable" described her reaction to the statement of placing all blame on the menopausal brain, rejecting the identity that attributes all cognitive difficulties during this life stage to perimenopause. While she acknowledged that everyone experiences perimenopause differently, she stressed that perimenopause or age-related changes cannot be used as an excuse for failing or incompetence. She rejected the idea that perimenopausal women are incapable or untrustworthy. Additionally, she drew on the 'forever young' discourse to strongly resist the socially constructed stereotype of perimenopausal women as becoming weak and fragile as they grow older.

Summary of the 'Forever Young' Discourse

The 'forever young' discourse was used by many of the participants to construct perimenopause as an age-related decline that greatly affects someone's family, relationships, interactions, occupations and identity. The arrival of perimenopause was commonly described

as a shock, with ageing often being a confronting experience for many of the participants, requiring the renegotiation of their identity. Many of the participants also described perimenopause as a loss, holding significance due to being the end of their reproductive lives and marking an end to their youth. When the 'forever young' discourse was used to construct perimenopause in these ways, the women were positioned as *declining women*. As a d*eclining woman*, changes that framed perimenopausal women as incapable, unfeminine, and emotionally unstable were stressed, reinforcing the circulating negative stereotypes about ageing women.

Additionally, a few of the participants resisted the 'forever young' discourse, instead describing perimenopause as a positive life stage where societal expectations of appearance are reduced, making space for these women to feel empowered and free. Many of the women who resisted this discourse described embracing a new identity that allowed them to tackle conflicts that they could not have tackled before, gain a new understanding of their wants and desires in life, and reject the negative stereotype of perimenopausal women being incapable. When perimenopause was described in these ways, the women were positioned as *liberated women*, resisting the discourse and changing the narrative around ageing women.

Discourse Five: The Taboo Discourse

Introducing the Taboo Discourse

The taboo discourse has been explored by many researchers, including Krajewski (2019b), who argues that it centres on avoidance and focuses on hidden power structures. It is not uncommon for women's bodily functions and processes to be constructed using taboo discourse; an example of this is menstruation, which society has socially constructed to be stigmatising in some cultures (Krajewski, 2019b). Through taboo discourse, perimenopause and menopause are constructed as a stigma-enhancing experience, due to the transition being tied to less control over the body and its functions (Rowson et al., 2023). According to Rowson

and colleagues, the taboo discourse frames perimenopause and menopause negatively, constructing them as something that should not be openly discussed and an experience that women should keep hidden. Additionally, using taboo discourse, perimenopause and menopause are positioned as an unpleasant experience, one that is capable of being a threat to a woman's social status and integrity (Rowson et al., 2023).

Orgad and Rottenberg (2024) have highlighted how the taboo and stigma surrounding perimenopause are linked to the way that older women have been considered to be culturally and socially invisible. According to Orgad and Rottenberg, the biomedical framing of perimenopause has contributed to ageing women being associated with negative stereotypes, with a woman's ageing connected to a loss of femininity, beauty, and social status. Historically, there have been attempts to shift the hormone-focused biomedical construction of perimenopause to something that is empowering and liberating (Orgad & Rottenberg, 2024). However, while there may be more attention on perimenopause and menopause in society and public spheres, women continue to feel the embarrassment, stigma and shame that continues to be tied to perimenopause, menopause, and ageing.

Through taboo discourse, perimenopause is also constructed as a stigmatising experience in the workplace, which has become increasingly relevant due to the large percentage of women in the workforce who are between 55 and 64 years old (Atkinson et al., 2021). Although many workplaces strive to improve, women are expected to hide the challenges they may face through perimenopause, as this is often seen as unprofessional, said Atkinson et al. Many women refrain from sharing their experiences related to perimenopause due to the risk of being seen as volatile, hormonal, and unpredictable (Atkinson et al., 2021).

Many participants used the taboo discourse to construct perimenopause as something that carries shame, drawing attention to how they felt incapable of openly discussing the topic in many contexts. In addition, the taboo discourse constructed perimenopause as something

that had historically not received enough attention, creating feelings of shame and embarrassment for many of the women when they reached this life stage. Many women used this discourse to construct perimenopause as an experience that lacked the support that they needed from their doctors, workplaces, and families.

Using the taboo discourse, participants commonly positioned themselves as *isolated women*, *invisible women* or *resisters*. Positioned as *isolated women*, the participants felt they had no one they could turn to, as well as a lack of resources and knowledge to lean on due to the silencing of perimenopause. When positioned as *invisible women*, these women described feeling unheard, dismissed, and encouraged to quietly move through the transition without drawing unnecessary attention to themselves. When positioned as *resisters*, these participants used the taboo discourse to resist the silencing. Many of these participants talked about wanting to start conversations about their experience with perimenopause with different social groups. They pushed back against the shame and embarrassment that many women described accompanying the transition.

Perimenopause Constructed as Unspeakable

Many of the women used the taboo discourse to construct perimenopause as something unspeakable and socially restrictive. Due to the lack of open discussion, many women felt unheard, unsupported, silenced, and suppressed. The common words and phrases that were often used when using the taboo discourse to construct perimenopause as unspeakable included, “we don’t talk about it”; “people don’t talk about the menopause”; “there’s been so little talk”; “an area people haven’t talked about for a long time”; “taboo”; “we just have to suffer through”; “neglected”; “underserved”; “disempowered”; “overlooked”; “I still often feel very small”; “not being heard”; “doctors do not listen to women especially”; “they haven’t listened to me”; “patriarchy”; “I wish the conversation were a bit more global”; “unusual topic to raise”, and “there’s so little to be afraid of, and there’s so much fear”.

Many of the participants constructed perimenopause as something that is hard to discuss with others, and a topic difficult to bring up in a conversation. It is through the lack of open discussions surrounding perimenopause between women, medical professionals and the general public that many women feel as though they lack the needed knowledge to help get them through perimenopause. Some of the current participants described how the minimal knowledge and conversations on perimenopause create feelings of isolation and loneliness as they try to navigate through these new experiences. "MJ" said:

> There's been so little talk about the menopause. You know, when I was growing up, and it's always been a bit of a (.) something that you know that's going to happen and you're told it's not shameful or anything like that but still nobody really talked about it, so it kind of feels like I'm going to somewhere that I really, really want to go. I really want to be menopausal, umm, but I don't know really what to look out for, for me, because there's so many variable signs, so it's kind of it is a little bit of an alone feeling. There's not a community of women that you can easily turn to. It's not a cultural rite of passage that we celebrate, so it is a little bit lonely, and I think that if you weren't as enthusiastic about it as I am, that it could be quite unnerving to step into that feeling alone, yeah.

"MJ" constructed perimenopause as something that was largely positive, non-stigmatising and non-shameful. However, perimenopause was also constructed as an unspoken topic, something that is not comfortably discussed or easily brought into the conversation, which results in little circulating information provided to put women at ease. She constructed perimenopause as a lonely experience and one she feels she can't openly talk to other women about, drawing on the taboo discourse to position herself as an 'isolated woman'.

"Georgia" constructed perimenopause similarly, having described perimenopause as a topic that she was not comfortable raising in a conversation. However, she indicated that other women may not all feel this way. She said:

> I didn't want to be the weirdo that started saying, “oh, by the way, how did you guys go through menopause↑” I mean, it was, but I'm sure, you know, like, as we've spoken about, you know, a lot of people are actually quite comfortable with just other women talking in that situation. So you know, like, why was it that I didn't feel comfortable saying something or even just talking about myself↑, you know, so that was, I think, just on reflection was probably a little bit confronting and and like, yeah, just means that (.) menopause itself really does remain taboo[laughing], and it it's just it's not OK. And even if you bring it up about yourself first, you just don't know how somebody’s going to receive that information [laughing].

“Georgia” made a connection in this statement between people who discuss their experiences of perimenopause and ‘weirdo’s’, constructing perimenopause as a topic that is not spoken about by ‘normal’ people. Furthermore, based on the statement of not knowing how someone’s going to receive information, perimenopause has been constructed as unpredictable, with perimenopausal women having to engage in self-surveillance and self-regulation to avoid other people’s discomfort.

Many of the participants described feeling uneasy and unable to talk openly about their experiences with perimenopause when they were around other company, connecting the embarrassment and taboo that continues to be associated with perimenopause to the patriarchy. “MJ” described the hard work that women have put in to try to shift the taboo and negative social construction of perimenopause and women’s ageing, which continues to exist. She said, “So it’s interesting that even though you try really hard to overcome a lot of the programming and the patriarchy that you’ve been brought up with there’s, there’s still some in there, you know, still very deep”. MJ described the taboo as a broader social issue that has persisted for many years and is hard to overcome. Using the taboo discourse, she positioned herself as an

isolated woman who has tried hard to overcome the patriarchy, but is unsure what avenue to take next.

"Anne" also discussed an interaction she had with her husband, highlighting the taboo that continues to exist around perimenopause. She said:

> Yeah, I was. Uh. Away for Easter and myself and my partner and my friend [anonymised name] and we had her 15 year old daughter was sat in the back of the car and so I started talking about this and what we were doing and having those general conversation and then afterwards [husbands name] was like, "do you think it was actually appropriate to talk about that in front of [friends' name] and [friends' daughter's name] ↑", her daughter and I was like "Yeah, why not↑" Why shouldn't you talk about this stuff↑" In fact, it's good for having, I mean [friend's daughter's name] is only 15, but she doesn't need to have too much information. Yeah, but she should be, she should be people, hear people talking about it. And for it to be normal.

Being told not to discuss perimenopause is a clear demonstration of the social restrictions that exist, with many people feeling embarrassed when the topic is brought up in discussion. While "Anne" has used taboo discourse to construct perimenopause as something people believe should not be discussed, at the same time, she positioned herself as someone who resists the taboo, shame, and stigma of perimenopause by confidently stating that perimenopause should be normalised and talked about.

Shame and Embarrassment

Along with perimenopause and menopause being taboo, they were also described by many of the current participants as an experience and topic that invoked shame and embarrassment, and as something that was stigmatising. When using the taboo discourse to construct perimenopause in this way, the common words and phrases that were used included, "shame" and "shameful"; "embarrass", "embarrassed", or "embarrassing"; "awkward"; "self-

conscious"; "uncomfortable"; "discomfort"; "alone"; "lonely"; "isolating"; "unnerving"; "you can be made to feel quite invisible"; and "stereotypes".

Many of the participants used the taboo discourse to construct perimenopause as an embarrassing experience. Often this embarrassment stemmed from the negative social constructions of ageing women or the belief that bodily processes and perimenopausal changes are something to be ashamed of. "Caro" discussed the embarrassment associated with perimenopause in relation to it being taboo when talking about the unpredictability of her bodily functions while she is at work. She said:

> Yeah, for me. Umm. Yeah, there is definitely that fear of (.) "Is it gonna be like my mum↑" And like my mom, she had a very tough time of it she had fibroids and she needed to have an operation for that, and she quite often would just flood with her period. She was just sitting at her office desk and it was kind of OK because she was office manager [laughing] I'm just a worker bee somewhere else, so it would be all that sort of embarrassment and all that sort of stuff. Having to organise all that. Walk a bloody chair through office and like I'm fine with blood generally, but just the whole sort of stigma of period blood and everything. I could just imagine. And I'm working with fairly well, I can work in all female teams which are great, but I also work quite closely with IT teams so you can be with a whole lot of men and they just have no clue generally.

"Caro" noted the stigma associated with menstruation and points out that she potentially works closely with men. The perimenopausal body is constructed as one that needs to be controlled and contained, without disruptions to male company.

When talking about perimenopause-related MTAs, "Zoe" described feeling embarrassed about someone seeing an app associated with this life stage on her phone. She said:

> If I'm putting something on my phone, I don't actually want it to be obviously a menopause thing because I don't know who's going to be going through my phone or who I'm showing my phone screen to. And there is that little bit of embarrassment and like, denial and, you know, because it it does, it makes me feel a bit old and so I'm like, oh, I just want something that's gonna say, like pause tracker or something, which is not quite so in your face as like "you're going through menopause" [laughter].

"Zoe" constructed perimenopause as something that should be hidden from others, and an experience you should be ashamed of, as it is associated with the negative constructions of ageing.

Perimenopause was constructed as taboo due to the negative, socially constructed association it has with age-related changes that occur as women navigate perimenopause. "MJ" said, "I can't remember what it was now, but it sounded like emm like that's a lot of a lot of our upbringing and and a lot of age and stuff because we've been taught shame around normal bodily function." She constructed perimenopause as an experience that is tied to shameful bodily changes, with women feeling shame because of these normal age-related changes. She also constructed the taboo and shame as something that is not present initially when someone is young, and as something that is 'taught'.

"MJ" also noted that perimenopause is a controversial topic to discuss in certain companies. While it may be an embarrassing topic to discuss, she described the conversations as beneficial to women, men, and children. She said:

> Like in a in a situation where it's not all like, really close friends. I wonder now if I'd be bold enough to say "I think something would be really relevant to talk about here would be about the stage of menopause for women. Well, and it affects men too. Is that something you're comfortable with↑ And if not, feel free to take 10 minutes out with your kids", you know, like and still honour the fact that because you wanted to talk

about it and that's that's huge because there obviously is some shame around that kind of thing. So I really encourage you to be bold and let people make their own decisions. They don't need to be policed. They can decide for themselves.

While “MJ” constructed perimenopause as something that other people should not be ashamed to discuss in front of anyone, she had previously described perimenopause as a topic where she did not know if she would be confident enough to talk about. The described lack of ‘boldness’ constructed perimenopause as an embarrassing and shameful experience, which made her question whether it is something that should be talked about in front of others.

The Gendered Nature of Perimenopause Taboo

Many of the participants associated the taboo of perimenopause with a much broader issue of gender inequality. The words and phrases that were used to describe perimenopause as a gendered taboo included, “culturally unacceptable”; “gender norms”; “men in charge of women’s health”; “society that’s based on men”; “wanting to be sensitive to men in this space”; and “it’s because it’s something men don’t experience that it is a taboo topic”.

A few of the participants used the taboo discourse to construct perimenopause as a gendered issue that is unspeakable. These participants drew attention to the lack of public attention, support and information that perimenopause as a topic received. “Zoe” said:

> It does feel a little bit like, you know, like I hate men hating, but it does feel like something that because it’s woman based, there’s not as much attention paid to it as maybe if it was something that both genders went through or you know, like I just feel like it is a little bit (.) untalked about not supported and it’s really, really difficult to find the help that you need or you know the answers that you need to support you through it.

While not wanting to place the blame on men, “Zoe” used the taboo discourse to position herself as an *invisible woman* and draw attention to the broader issue of gender in receiving the public attention and support that women need.

"Caro" also used the taboo discourse to describe the perimenopausal experience as one that remains taboo, as something where women should remain unheard and keep their experiences to themselves, particularly when around men. She said, "Yeah, the world definitely feels like it's set up for male bodies and anything outside that is not accommodated and you have to hide it and can't possibly talk about it in front of mixed company [laugh]". "Caro" constructed perimenopause as something that makes people uncomfortable when talked about, especially males. Perimenopause was described as something that needs to remain hidden, where many women feel shame and are embarrassed to bring up their experiences of perimenopause. She demonstrated that women are controlled by a 'male-dominated' world, being restricted by the social situations in which they can and cannot talk about their experiences. "Caro" constructed women as being constrained to silence by the discomfort that many males feel when perimenopause and menopause are discussed.

Resisting the Taboo

Many of the participants resisted the taboo discourse, challenged the silence, and positioned themselves as *resisters*. When positioned as *resisters*, the participants would use words and phrases, including "we need a bigger conversation"; "community" and "community of women"; "come together"; "talk about it"; "we've got to open the conversation"; "it's normal" and "normalise". Perimenopause was constructed by the participants as something that should be normalised and discussed in all social settings, opening up conversations, research, and knowledge about the topic. Many participants described the importance of gaining a community of women, allowing women to come together and talk openly to minimise the shame and loneliness that can accompany perimenopause.

"Georgia" explained why she thought it was important to be involved in this research: to break the taboo, start conversations, and improve things for future generations. She said:

So I'm a staff member, so I sort of thought supporting the initiative emm (.) was good for improving hopefully things for future generations emm because I think you know, yeah, I guess in our parents' generation it was probably a taboo subject and our generation is probably more like um I'm probably a bit of a little bit of a campaigner in the right circles I'll be saying ohh this is because of (.) emm you know my what I'm going through at the moment and trying to… I I work with another few women, but majority of them are Asian and probably aren't that comfortable bringing these conversations to the table so I kind of bring them along for the ride and the guys in my team have got wives so [laughing] you know, I'm kind of like, well, we're all in it, aren't we↑ and this is what I'm experiencing. Your wife or emm your the the woman I work with may not have the same symptoms, but it might just trigger something that might alert them to go to their GP and seek guidance.

"Georgia" described the taboo of perimenopause as something that is continued through generations, and as something that needs to be broken by normalising it as something that should be talked about. By resisting the taboo discourse, she positioned herself as a *resister*.

"Zoe" also resisted the taboo of perimenopause by bringing it up with her friends while out for dinner. She said:

But one of the, so our first group, lot of children, they, and we have a coffee group, and so some of them are older than I am, and we went out for dinner, and we all met and it's just like "what are the kids doing". But I broached the topic of perimenopause, and then all the other women were like, "yes↑" and we had this, like, very amazing conversation in the middle of the Thai restaurant. So pity our neighbours [laughing], but, and it was quite good for me because all of a sudden, I was like, oh, that's good. It's not just me. Like, it's happening to some of, you know, my circle of friends as well so that was… because I think you do feel quite alone with it. It's not something that's

talked about, and I think you try to just get by and not cause a ripple with all your emotions and stuff and sometimes that's really hard to do [laughing].

"Zoe" described perimenopause as a topic that is not easily brought up in conversation, but when it is, it is very beneficial for everyone. Perimenopause is also constructed by the taboo discourse as something that makes people at other tables possibly uncomfortable.

Finally, many of the participants expressed their anger and rage towards the fear surrounding perimenopause, with a lot of this emotion being gendered. The participants described how it was often men who felt uncomfortable with others talking about perimenopause. "MJ" said:

> Really there's so little to be afraid of, and there's so much fear. That it confuses me, but I think we've got to open the conversation because the men are half of the planet too. And it's the lack of knowledge that brings all the fear about, you know, they can't just throw their hands up because they came from a woman they're probably married to a woman. It affects them at work. Yeah, sorry. It gets me wound up.

"MJ" described perimenopause as something that men are not concerned about and often avoid due to it not directly affecting them. However, she noted that men should not be afraid of perimenopause and instead should be involved in opening the conversation.

Summarising the Taboo Discourse

The taboo discourse was drawn on by the participants to construct perimenopause as unspeakable, being described as something that is not discussed in private and public spaces, and when discussed, it often made people uncomfortable. The silencing of perimenopause made some of the women feel alone, often being positioned as an *isolated woman*. The taboo discourse was also drawn on by the participants to contrast perimenopause as stigmatising, shameful and embarrassing. Additionally, many of the participants used the taboo discourse to construct perimenopause as a gendered issue. Through this construction, the taboo was tied to

a broader issue of gender inequality, and the women use the taboo discourse to position themselves as *invisible women*. Finally, some of the participants resisted the taboo discourse, positioning themselves as *resisters*. While resisting the taboo, they encouraged the development of a support network for perimenopausal women and described being motivated to normalise perimenopause. These results suggest that perimenopause still carries a lot of taboo, despite work being done by more recent generations to minimise it.

How Are MTAs Discussed by the Participants, and How Do MTAs Shape Their Perceptions of Perimenopause?

Many participants were critical of their interactions and experiences with MTAs, expressing how this had shaped their perceptions of themselves, perimenopause, and the world. Academic scholars have also been critical of how MTAs shape app users' perceptions. Polo et al. (2023) highlighted how particular norms are reproduced through MTAs, focusing on how heteronormative ideas of gender are produced through these apps. Additionally, Pichon et al. (2022) discussed how socially constructed ideas around menstruation are supported through MTAs, contributing to the shame and stigma that already surround menstruation.

This section of the analysis will focus on how participants described their use of MTAs and how they discussed MTAs in relation to the five identified discourses: the biomedical, natural, neoliberal, 'forever young', and taboo discourses. The participants often drew on multiple discourses when describing their experiences, mainly drawing on the biomedical and neoliberal discourses to construct perimenopause as a medical issue and as something that is influenced by neoliberal governance. Additionally, the participants, by drawing on the 'forever young' and taboo discourses when discussing their use of MTAs, constructed perimenopause and ageing as taboo, with MTA use experienced as particularly stigmatising for perimenopausal women who did not fit a young, fertile profile.

The Biomedical Discourse

The participants drew on the biomedical discourse when discussing their use of MTAs to construct perimenopause as a medical issue. The participants described how MTAs often reduced perimenopause to a list of physiological changes, and focused significantly on the hormonal changes that happen during this life phase. Many of the participants highlighted how MTAs encouraged them to focus their attention on medical ailments and 'symptoms' experienced due to menstruation or perimenopause. The participants stated that many of the MTAs made them feel they should rely on MTAs to tell them which symptoms they 'should' or 'could' be feeling at different points in their cycle, rather than trusting their own experiences. Many participants noted that the list of symptoms provided by MTAs was almost entirely focused on biological components of experience, with little recognition of the psychological and social aspects of participants' lives.

Perimenopause as Medically Abnormal. The participants drew on the MTAs use of the biomedical discourse to construct perimenopause as medically abnormal. The normal bodily changes that many of the participants experienced while going through the transition, such as menstrual cycle changes, were labelled as 'late', 'abnormal', and 'dysfunctional' within these apps. "Beth" said, "Well, I had this reaction, it told me I'm my period's 10 days late and it's like there is no late. I'm in perimenopause. How dare you put that label on my physical experience." The 'late' categorisation made her feel that her menstrual cycle changes were abnormal.

"MJ" also had her cycle labelled as abnormal by an MTA called Clue. She stated, "So I've actually, I've been, I've tracked my period on the Clue app for this one so that it's registered that it's late and it actually said it's outside the normal bounds and stuff". Additionally, "Ruby's" body was categorised as dysfunctional by her app. She said, "so I found that my periods used to be on the dot, regular. And then they, then they became irregular. And then my body sort of became dysfunctional. According to the app [laughing]."

Prompted to Consult the Doctor. The participants highlighted how MTAs reproduce the biomedical discourse by encouraging them to consult a healthcare professional about reproductive changes. Mable said, “It has sent me to the gynaecologist at at one stage as well because umm of (.) well increased blood flow and frequency, which was quite concerning.” This encouragement framed perimenopausal changes as a medical issue that cannot be dealt with without the support of a medical practitioner.

The Circulation of Medical Information. Some participants discussed their experiences receiving medical information through their MTA. “Sienna” explained that information shared through the apps often came from medical or pharmaceutical professionals, who were predominantly focused on the hormonal changes of perimenopause and treatments. She said:

> I know the app I use provides lots of information around menopause and perimenopause, but because it's by a Doctor who sells medicines and consultations and that I always feel that there's a bit of conflict there as to whether that information is necessarily the best information or most kind of agenda-free information.

The Reduction to Hormones. Many participants described how their MTA often made assumptions about how they should be feeling solely based on predicted hormone levels, reproducing the biomedical discourse. “Rita” said:

> I do get quite skeptical with, you know, like I saw this a little bit on the Moody app with apps that that try to kind of shoehorn you into, you know, this is how you can expect to feel at this point. And so these are the things that you, you know, you're going to be better at doing this exercise or that exercise. I think it is useful to kind of know where your hormones might be at and how you might feel, but I I do feel like sometimes it goes a little too far for what the evidence kind of really allows us to say about what a typical person might be feeling, or able to do at that point.

The participants, when using MTAs, were positioned by biomedical discourse as *hormonal patients*, where their experiences are reduced to a list of symptoms, and hormones are central to the individual.

The Natural Discourse

The natural discourse frames perimenopause as a normal life stage and an inevitable part of the ageing process. Many of the participants expressed that perimenopause was often not framed as a natural life stage by their MTA. Many participants who drew on the natural discourse to construct perimenopause as a natural life stage resisted engaging with MTAs, stating that they should instead listen to their own bodies rather than rely on machines to quantify and measure them. “MJ” said:

> Do you think there's some sort of unexpected benefit of of when, when, when it's trying to track us and say you're due now and and we're saying, oh, we're not and it's kind of the benefit of learning to put these things down and listen to your own body like it's almost like these machines are teaching us that they can't do what we can do just by listening to our own body.

“MJ”, along with other participants, described their bodies as embodied sources of knowledge that have greater authority than MTAs in determining what is needed. She emphasised that there is a greater benefit and deeper understanding that comes from being attuned and aware of your own body, rather than relying on an app that produces quantifiable data.

The Neoliberal Discourse

Many participants expressed feeling that their MTAs reproduced the neoliberal discourse by encouraging them to self-track and body-monitor. Riettens (2025) described MTAs as platforms that convert bodily processes into quantitative data to enhance knowledge and self-control. Riettiens also said that the self-knowledge produced through self-surveillance

encourages people to be responsible for their own health, solve their own problems, and, in the situation of 'failure', to bear all responsibility on the individual rather than collective entities.

Neoliberal Health Regimes. Some participants noted that their MTAs primarily tracked menstrual cycle, fertility, and associated symptoms; it was also highlighted that MTAs monitored participants' weight, amount of exercise, caloric intake, sleep, and health choices. The participants described MTAs pushing health regimes onto them. "Ruby" discussed the health challenges she was prompted to take on to 'improve her health' and lose weight through her MTA. She said:

> They keep advertising how to lose weight and track your calories…And then there's all these challenges to improve your health. So I had a look at the popular ones and there was workouts, weight loss, self-care, meditation, sleep, hormonal health, trying to conceive and pregnancy.

Participants such as "Ruby" were encouraged by their MTA, which drew on neoliberal discourse, to take responsibility for their own health by participating in these challenges.

Perimenopause as Personal Responsibility. Some of the participants drew on the neoliberal discourse to construct perimenopause as something that required self-care and maintenance, which was supported by their MTA use. "Zoe" described being held accountable by her MTA, framing her health and well-being as her responsibility. She said:

> The app is making us prioritise caring for ourselves. That for me is, you know, like that's making me stop and think about myself and think about my cycle and think about the things I can do to support myself, to be, you know, because you, you know, when you're exercising or eating better or getting enough sleep or (.) doing those little self-care things, you do cope better with everything and it's when all that goes out the window, that's when it's really terrible. And so I suppose I look at the app as a way of

reminding me to do all those things that I need to do to look after myself, care for myself.

"Zoe" framed her well-being during perimenopause as something she needed to prioritise so that she could support herself, as it was not going to be prioritised by anyone else. Based on this statement, Zoe's MTA drew on the neoliberal discourse to encourage body surveillance and monitoring, constructing her body as a personal project in need of improvement.

Perimenopause as Profit. Many participants described how the MTA they used drew on the neoliberal discourse to construct perimenopause as profitable, pushing them to 'better' manage themselves by paying for a 'special' subscription. Many of the participants resisted this and were disappointed that their position as a perimenopausal woman was exploited for profit. "Jessica" said,

> It sort of irritates me that umm the perimenopausal stuff is behind the pay wall. I don't want to pay for it either and I I do find it kind of annoying that it's like perimenopausal people are framed as a kind of special extra group, not the norm, whereas why should it be that people who are just having their regular experience get to have it for free and those of us who need something else have to pay for that.

Some participants described feeling pressure from their MTA to invest financially in their app, in return for access to 'special' information, knowledge, and a better understanding of their bodies.

The 'Forever Young' Discourse

Many of the participants described how their MTAs drew on the 'forever young' discourse to construct perimenopause as the end of a woman's prime years, and as a loss of fertility. Some of the participants noted that perimenopause and ageing were framed through MTAs as a health decline, with a focus on the reproductive 'decline' that happens during this

life stage. Numerous participants discussed their responses when their menstrual changes were labelled abnormal. Many expressed they felt their MTAs drew on the 'forever young' discourse to reproduce the perimenopausal body as malfunctioning, as it was no longer young and reproductive. Many participants expressed that their MTA drew on the 'forever young' discourse to frame fertility as the 'ideal' and as a significant symbol of youth.

Health Equals Fertility. Many participants described how their MTA drew on the 'forever young' discourse to construct *health equals fertility*. "Grace" said:

> The perception of health is health equals fertility, and that's really hard to put in with the perimenopause it's like sort of fringe to that. It's sort of health, but it's not fertility. Therefore, it's not health kind of thing↑. There's a disconnect there definitely on my app. Yeah, health is, it's very much a female ideal. It's sort of it, I don't know, I feel like it's promoting this ideal, but again, tied to fertility…But even still moving forwards into a perimenopause situation, I am concerned that I am going to lose control or that I won't be healthy because I'm not regular now and moving into a different phase… And umm (.) yeah, the app sort of, it talks about a lot of those health topics and stuff. It's like working with your body and this ideal body. It's not working with you as an individual. It's trying to bring you back to this female ideal I feel anyway, it's a personal opinion, but I absolutely do share that the app has reinforced, sort of the shame associated with fertility.

"Grace" expressed that her MTA connected fertility to youth and portrayed the fertile woman as ideal. She also expressed her concerns about believing that she would lose her health due to perimenopause, which supports the 'forever young' discursive construction of youth as the ideal. The participants felt they were positioned as *failing women* through their MTAs reproducing the 'forever young' discourse and constructing perimenopause as reproductive 'failure'.

The Taboo Discourse

Many of the participants shared that they felt that MTAs are not designed to support perimenopausal women and are instead focused on cyclically menstruating women, with the lack of recognition of perimenopause supporting the framing of perimenopause as invisible. Some of the participants expressed feeling shame and embarrassment when their normal perimenopausal changes were labelled as 'abnormal'. Some of the participants noted that MTAs are marketed as tools to support people; however, they contribute to the idea that women's bodies should be controlled and managed in private, minimising their need to seek community support.

For example, many of the participants discussed how MTAs drew on the taboo discourse, constructing perimenopause as a negative, undesirable experience that is often perceived to be embarrassing and shameful. "Jessica" said:

> The other thing I noticed that I didn't like as much was just, cause I don't think of perimenopause in negative terms really emm that all of the symptoms you log really are, they're all bad things, you know, so you have a list of "what are you experiencing" and it's like brain fog, anxiety, and there's one that's like, sagging boobs or something and it wants you to, like, click that every day, you know↑ Like, are they still sagging↑ Are they supposed to have, like, lifted since yesterday↑ Or is that something that I'm gonna expect, you know, like, it↑ They were all terrible things [laughing].

While "Jessica" is making a joke to the group about some of the listed experiences, she has described how MTAs have drawn on the taboo discourse to position perimenopausal women as undesirable.

How Do These Five Identified Discourses Intersect?

This section of the analysis moves beyond analysing the discourses individually and explores how the five identified discourses complement, contradict, or intersect with each

other, as well as the interesting tensions that arise. Analysing the intersection of discourses is an essential step in understanding the way an object is constructed, as discourses do not operate discretely (Parker, 2014). “Discourses embed, entail and presuppose other discourses to the extent that the contradictions within a discourse open up questions about what other discourses are at work” (Parker, 2014, p. 14). This means that the participants drew on multiple discourses simultaneously to construct their experiences of perimenopause in relation to their MTA use.

As the biomedical discourse was predominantly drawn on by the participants, I will use it as the primary discourse to analyse its intersection with the other identified discourses. At the beginning of this research project, I criticised other academic researchers for framing perimenopause solely through a biomedical lens. While this part of the analysis is anchored by the biomedical discourse, it does not minimise the influence of the other identified discourses in constructing women’s experiences of perimenopause.

The Intersection of the Biomedical and Neoliberal Discourses

The intersection of the biomedical and neoliberal discourses, and how they are drawn on together to construct perimenopause, has been previously discussed in the literature (Calvin et al., 2026; Orgad & Rottenberg, 2024; Rottenberg & Gilchrist, 2024). The participants drew on the biomedical and neoliberal discourses at the same time to construct perimenopause as a medical condition. They presented it as something that must be managed and controlled individually, highlighting the individual responsibility placed on women. “Sadie” discussed needing to monitor her symptoms and described herself as being responsible for ensuring that problems with her body did not arise in the future. She said:

> I think there's a factor too around like the subtlety of symptoms that you might, if you were tracking, be able to start seeing patterns within that before those symptoms became like a major problem down the line. Like, rather than noticing it when actually I'm really suffering but sort of looking at it quite a lot earlier than that and going,

actually, I'm seeing a pattern here, and it's gradually getting worse and kind of being able to deal with it or do something about it earlier rather than later on.

"Sadie" drew on these two discourses to position herself as a *responsible patient* who takes charge of her health and body. Due to the medicalisation of everyday life, women are expected to look after their own and their families' health (Erol, 2016). Errol argued that women are expected to seek accurate health information and maintain their 'duties' and 'responsibilities' in the home as a 'homemaker' (Erol, 2016).

The Medically Controlled but Individually Responsible Subject. Mann and Bertotti (2024) showed how the biomedical and neoliberal discourses operate together to create a medically controlled, yet individually responsible subject. Their research was focused on the use and experiences of contraception, but it is relevant because they discussed how these discourses affect the perceptions of women's reproductive bodies. They outlined the more recent theorisation of biomedicalization, which not only controls medicalised phenomena but also encourages engagement with biomedical technology to manage risks successfully and achieve self-optimisation. Mann and Bertotti argued that using 'biotechnology' (which could include MTAs) to manage oneself aligns with neoliberal ideology, which stresses personal responsibility and agency. They named the interaction of biomedicine and neoliberal governance *biomedical subjectification*, which shapes self-perception and lived experience. They further argued that these discourses construct women's reproductive bodies as sites needing constant monitoring and management, with this 'gained control' presented as empowerment and autonomy.

Personal Responsibility. The Neoliberal and Biomedical discourses intersect to position the perimenopausal woman as individually responsible. Cardona (2021) highlighted how neoliberal discourse frames health disparities and economic outcomes as a product of individualism and autonomy, with marginalised and disadvantaged people often being a key

target of government programmes and policies due to their 'failed' ability to be personally responsible for their health. Furthermore, Cardona noted that neoliberal discourse fails to acknowledge the role of social, structural, and economic factors in shaping individual behaviours and choices. The individualisation models that underpin our healthcare systems position health as an individual issue, linking individual lifestyle choices to health outcomes (Cardona, 2021). In turn, it is through this exact neoliberal framing of health that many perimenopausal women feel obliged to personally manage their perimenopausal experiences and outcomes; by monitoring their bodies, they will gain a sense of control. Additionally, the Biomedical discourse supports the Neoliberal discourse, reducing individual focus to symptoms, risk management, body monitoring, and treatment.

Building on this, neoliberal individualisation can be conceptualised as a form of social action and as a mechanism that reinforces power by shaping social realities (Naug, 2025). Naug discussed the distinction between individualism and personal responsibility. Individualism is a foundational aspect of neoliberalism (Naug, 2025). In contrast, personal responsibility is a component of the neoliberal social order, in which individuals must manage their own risks and avoid burdening others. Similarly, the Biomedical discourse is also individually-focused, constructing the patient as someone who is capable of and obligated to take responsibility for their health and be involved in decision-making (Naug, 2025).

Medical Authority, the Medical Gaze, and Self-Surveillance. The Biomedical discourse positions medical authorities as experts. Hayfield and Campbell (2022) discussed medical expertise in relation to the biomedical construction of perimenopause. They conducted their research with undergraduate students, seeking to understand their perceptions of perimenopause and menopause. Their choice of undergraduate students as their participants was important, as they argued that young people's understandings of perimenopause were likely to be shaped by stereotypes and popular culture, reflecting the wider social discourse.

Their participants commonly framed perimenopausal women as people who would indefinitely seek medical advice and reassurance from medical professionals. Their participants also positioned doctors as the medical experts holding significant power over perimenopausal women's bodies. Additionally, the participants of their study dominantly positioned perimenopause within a biomedical framework, where HRT was prescribed to solve the perimenopause 'problem'. Their findings reflect the dominant biomedical construction of perimenopause as a medical condition that should be controlled and treated. Hayfield and Campbell argued that the biomedical framing of perimenopause and menopause is problematic as it overlooks the varied experiences of these women, and misses the social, cultural and relational components that are part of their experiences.

Hyde et al. (2010) also discussed this expert authority, highlighting that many women experienced uncertainty and confusion due to their perimenopausal experiences, leading them to seek a diagnosis and reassurance from medical authorities. From this perspective, medical authorities had greater power over 'patients', with many perimenopausal women's experiences being dismissed, often resulting in distress (Hyde et al., 2010). Like what was discussed by participants in this study, Hyde and colleagues found that medical professionals focused heavily on the medical diagnostic criteria when diagnosing perimenopause. This was based on the individual's menstrual cycle changes and chronological age, and ignored other significant perimenopausal changes that were concerning to the individual. Through repeated dismissal, some perimenopausal women feel obliged to engage in self-surveillance and monitor themselves closely to gain a greater understanding of their own experiences.

The *medical gaze* and *self-surveillance* are concepts developed by Foucault (1973, 1977). The gaze is considered a disciplinary technique that encourages self-monitoring and self-control over behaviour (Shilling, 1993). These concepts are important in understanding perimenopausal perspectives, as the medical gaze devalues embodied experience, placing

greater value on clinical observations and classification frameworks (O'Callaghan, 2022). The medical gaze is closely tied to power, in which medical institutions determine what is "truth" and medical professionals hold greater authority over their patients, wielding expert knowledge and the power to diagnose and treat (Hancock, 2018). Through neoliberal discourse, the medical gaze has become internalised, with people monitoring, managing and controlling their bodies through this biomedical framework.

The Biomedical, Taboo and 'Forever Young' Discourse

The biomedical, taboo, and 'forever young' discourses were often drawn on together by participants to construct perimenopause as a medical condition that can be disruptive to one's identity. The intersection of these discourses positioned the participants as unheard and silenced, encouraging them to manage their experiences discreetly and pressuring them to still be perceived as youthful and feminine. On its own, the biomedical framing of perimenopause reduced women's experiences to hormones, symptoms, and a future of decline. The biomedical discourse constructs perimenopause as a disease, with symptoms requiring medical intervention and treatment, and positions perimenopausal changes as a medical concern. The taboo discourse silenced the participants, making them feel stigmatised and as though perimenopause is something that could not be discussed. This left many participants unsure who they could turn to for support beyond medical professionals. Through the discursive construction of perimenopause as taboo, women are encouraged to manage and control their experiences privately, which may be why some people turn to MTAs to achieve personal management and control. The 'Forever Young' discourse on its own framed perimenopause as a loss of fertility, femininity, and youth. Through this discursive construction of perimenopause, youth is something that should be maintained for as long as possible.

An extract from a discussion with Rita showed how these three discourses could be drawn on together. "Rita" said:

> I think, emm, just an acknowledgement of the transition of this period of life. I think we talk a lot about puberty and our teenagers, and the impact that that has on all the ways that they operate in the world. And perimenopause is a really similar kind of erratic period of hormones in our lives that we seem to just forget about or emm (.) you know, kind of we don't talk about it's, I think some women feel shame about it... It's kind of this end of our, you know, reproductive and and you know, kind of womanly lives and and and so people don't talk about it. They don't celebrate it. They don't share the experiences of it. And I I think that's it's a real shame that we we miss out on that.

"Rita's" statement demonstrated a subtle interaction among the biomedical, taboo, and 'forever young' discourses. She drew on the biomedical discourse to construct perimenopause within a medical framework, drawing attention to hormonal changes that happen during this stage. In addition, she drew on the taboo and 'forever young' discourse to construct perimenopause as a life stage that brings shame, and is forgotten, not supported or discussed.

These discourses intersecting each other have also been identified in the academic literature (Matina et al., 2025; Orgad & Rottenberg, 2024). Orgad and Rottenberg (2024) said that it is through the dominant biomedical construction of menopause, which intersects with the taboo and shame that surrounds it, that the negative representation of women's bodies is created. Additionally, the intersection of these discourses reinforces broader cultural norms that view women's ageing bodies as undesirable (Orgad & Rottenberg, 2024). Many women expressed feeling stigma due to menopause, and emphasised that many younger women viewed menopause negatively as it is seen to be associated with a loss of youth and femininity (Matina et al., 2025).

The Biomedical and Natural Discourse

The biomedical and natural discourses were often contradictory, with perimenopause constructed in oppositional ways. Drawing on the biomedical discourse, the participants

described perimenopause as a medical condition that required treatment, and participants interacted with doctors by seeking medical advice regarding perimenopause. The natural discourse often conflicted with this construction of perimenopause, with participants drawing on it to describe perimenopause as a natural life transition that does not require treatment. Hyde et al. (2010) have highlighted that the concept of menopause is not fixed, and that women may draw on the biomedical or natural constructions of perimenopause at different stages, depending on what they are experiencing at the time. This supports the idea that perimenopause is socially constructed. Hyde and colleagues said, "When symptoms and problems became excessive for participants, menopause became redefined from a natural process to a state of illness and disease, and thus became a legitimate basis for medical intervention" (2010, p. 807). Other researchers have also found similar results: individual women shift between biomedical and natural discourses when recounting what menopause means to them (Guillemin, 2002; Hunter et al., 1997; Morris & Symonds, 2004; Stephens, Budge, & Carryer, 2002).

When the participants drew on the biomedical and natural discourses simultaneously, it created an interesting tension. This tension is noteworthy, as when drawing on both discourses, participants had to negotiate their natural identity with a biomedical one. These participants viewed perimenopause as a natural life stage progression but simultaneously perceived their experiences through a biomedical framework. This tension was often presented as confusion and uncertainty about whether their experiences were considered medically 'normal'. Additionally, many of the participants expressed not knowing whether they needed to seek medical advice and pharmaceutical support for their discomfort, or whether their experiences were typical of someone going through perimenopause.

An example of this tension being negotiated was shown in "Mable's" statement. She said:

> I have a completely broken thermostat like, just. I just don't even, I, it got so broken so quickly umm and the the dryness of my skin and my hair and everywhere is, and and hair fell out. And I've had a heart palpitations and a weird social anxiety that I have never had before. Never, ever experienced that sort of thing. So it definitely is experiencing the world in a different way and (.) maybe tracking them I would take, maybe I'd take more more notice. Maybe I don't want to take more notice of them. I don't know. But I feel like I should be able to get through this without any other medication, and that's this whole, the conversation around HRT is like a really big one for me, or thought process currently because I I shouldn't need it like the the world should be set up that we can go through these things as women, without having to rely on a pharmaceutical company for the rest of my life to be "normal", whatever the fuck that is, like. This is just different, right↑ Something that I can potentially manage. You can see how I'm talking myself out of going to see the doctor.

She dominantly drew on the biomedical discourse to construct her experiences, emphasising the impact of her perimenopause-related symptoms and how she perceives perimenopause as a long-term decline. At the same time, she actively resisted the biomedical discourse, drawing on the natural discourse framing perimenopause as something that should be managed individually, and without medical or pharmaceutical intervention.

This tension has also been identified in the research literature. Lyons and Griffin (2003) emphasised that even when people labelled menopause as a natural experience, they tended to fall back into a biomedical construction, highlighting the impact of symptoms, hormonal changes, and treatment. They argued that the tension between the biomedical and natural constructions of menopause frames it as uncertain and confusing, with medical professionals contributing to this confusion as they also try to understand it through contradictory biomedical

and natural discourse. This confusion contributes to the construction of women's aging bodies as unpredictable and mysterious (Lyons & Griffin, 2003).

In the often contradicting biomedical and natural constructions of perimenopause, there was also tension between how these opposite discourses positioned the participants. When their experiences were manageable, they often drew on the natural discourse to position themselves as empowered women who trusted their management capabilities and understanding of their bodies, and who did not need to seek reassurance from medical professionals. When their experiences became personally unmanageable and disrupted, the participants drew on the biomedical discourse to position themselves as patients who needed medical support.

Bringing this back to one of the study's aims, which was to explore the ways MTAs shape women's experiences and perceptions of perimenopause. The tension between the biomedical and natural discursive constructions of perimenopause is reproduced and intensified through MTA platforms. MTAs draw on the dominant biomedical discourse to get app users to focus on managing their bodies by tracking symptoms and menstrual cycles. Less dominantly, MTAs draw on the natural discourse to promote menstruation as a naturally occurring, normal, regular, monthly process. Through confined medical parameters and regular menstruation being framed as normal, perimenopausal women are framed as 'abnormal', as often their experiences deviate from the predictable experiences of young, regular menstruators.

Conclusion

The intersections between the five identified discourses show that women draw on and resist complementary and contradictory discourses, shaping the way they understand and experience perimenopause. The analysis of these intersecting discourses shows how they contribute to various and sometimes conflicting ways women make sense of their bodies and identities during perimenopause.

Chapter 6 – Conclusion

This final chapter provides an overview of the research project, a reflection on the research process, implications, and future research recommendations, limitations and strengths, and a concluding statement.

Overview

This study provided a new understanding of the discourses diverse perimenopausal women in Aotearoa/New Zealand draw on to construct perimenopause within their talk about MTAs. This research project was guided by a social constructionist theoretical framework and a Foucauldian discourse analysis (FDA) analytical framework. This study aimed to answer the following research questions: How do diverse perimenopausal women construct perimenopause within their talk about menstrual tracking apps in a New Zealand context? And how do MTAs shape women's experiences of perimenopause? Taking a participatory approach, the study highlighted the social, emotional, and cultural complexities of women's experiences of perimenopause in New Zealand. Additionally, it provided greater insight into the intersecting discourses drawn on and the subject positions participants take up. These resist and reproduce socio-cultural norms and expectations, and influence what can be said and experienced from certain subject positions.

I identified five intersecting discourses that the participants drew on or resisted to construct their experiences of perimenopause. These were labelled the biomedical, natural, neoliberal, 'forever young' and taboo discourses. The biomedical discourse constructs perimenopause as a medical issue that was predominantly framed around hormones, symptoms, interactions with medical professionals, and HRT. The natural discourse constructs perimenopause as a natural life transition, an experience that should not need the support of the medical or pharmaceutical industry. The neoliberal discourse constructs perimenopause as something that should be individually managed and controlled, placing all responsibility on the individual rather than institutions. The 'forever young' discourse constructs perimenopause as

an event of reproductive loss and as a marker of the end of youth, fertility, and femininity. Finally, the taboo discourse constructs perimenopause as something that is shameful and embarrassing, and something that should remain hidden and not discussed.

Reflection

Throughout the analysis process, my personal perspectives and understandings of perimenopause have shifted. I found that, like many of the participants, I too understood perimenopause through a biomedical framework and dominantly reduced women's experiences of perimenopause to hormones, symptoms, and treatment. Throughout the analytical process, I continually reconsidered my reflexive positioning, taking care not to let my dominant biomedical assumptions and biases seep into the findings. I had to be careful not to describe the participants' experiences through this biomedical lens. While I still primarily understand my body through a biomedical framework, this research project has allowed me to critically evaluate how perimenopause and women's bodies can be constructed alongside other discourses, and how broader power relations, social and cultural assumptions, and norms influence my perceptions and experiences.

Throughout the process of completing this thesis, many people have asked me why I have chosen to focus my research on perimenopause, especially as someone who is young and far from reaching perimenopause. The answer to this question has changed as I have grown more aware and gained a deeper understanding of the challenges, frustration, disappointment, and uncertainty women face as they reach perimenopause, but also the empowerment and personal growth that can be experienced. Beginning this study, I believed I was conducting research in an under-researched area, where the findings would provide valuable insights into women's experiences of perimenopause, as well as contribute to women's health. While I still stand by this belief, when people ask me now, towards the end of the project, I answer more passionately, feeling proud that I am helping to ensure diverse and marginalised women's voices in New Zealand are heard.

Research Implications and Future Research Suggestions

The findings of this research have valuable implications for MTAs and women's health. The participants' discussions highlighted how the experiences of perimenopause are influenced by socially constructed norms and expectations.

Perimenopause is Socially Constructed

My findings reinforce the fundamental principles of social constructionism and FDA, contributing to the understanding that perimenopause cannot be reduced to a biological change or a single definition, and is instead a construction produced through discourse, power, and cultural and social expectations of gender, health and ageing. My findings show that perimenopause is a socially constructed concept, where there are many legitimate "truthful" realities. Participants, in their discussions, demonstrated that they often drew on intersecting and sometimes contradictory discourses to construct their experiences of perimenopause. I found that there was no single construction of perimenopause; instead, perimenopause was constructed through socially constructed realities, discourse, and positionality. The implications of these findings are that perimenopause cannot be defined solely through a biomedical framework; instead, it must consider the discursive identities negotiated by perimenopausal women and how these identities are shaped by power relations and broader ideas about health, ageing, femininity, and gender.

MTAs Shape Our Experiences

My findings reinforced the idea that MTAs are not neutral; rather, they actively shape how people view themselves and the world around them. Many of the participants described that their use of MTAs influenced their perceptions of perimenopause, and the dominant discourses drawn on to construct their experiences. As an MTA user myself, I was unaware of the power these platforms have in shaping app user experiences before conducting this research. This partly may have been due to my positionality, as someone who experiences

regular menstruation, is in the reproductive stage of life, and is not perimenopausal, I previously did not appreciate the influences of MTAs for someone whose cycles are, in app terms, irregular or categorised as 'abnormal'.

As evident in the findings, MTAs privilege the biomedical and neoliberal discourse. By focusing app users' attention on symptoms, medical 'abnormalities', and hormonal changes, and encouraging the user to seek medical attention, the app encourages the perimenopausal MTA user to understand their experience through biomedical discourse. In addition, by encouraging app users to remain diligent with their tracking through notification pop-ups and consistency incentives, MTAs encourage women to think of their bodies as sites that need to be optimised and managed. Evidently, the biomedical and neoliberal discourses are reproduced through MTAs and affect women's perceptions of perimenopause, their bodies, and lived realities.

Additionally, the participants' discussions revealed tensions between the biomedical and natural discursive constructions of perimenopause. MTAs favour the biomedical discourse, shaping the parameters through which users understand their bodies and experiences. Many of the participants drew on the natural discourse to resist the biomedical construction of perimenopause; however, they stated they still felt it was necessary to monitor their bodies, symptoms, hormones, and changing cycles using MTAs. MTAs privilege in the biomedical discourse has implications for people's sense-making and realities.

MTA Future Research Recommendations

My research showed that MTAs are discursive sites that can influence how women perceive themselves, phenomena, and the world. MTAs are argued to empower users by gaining self-knowledge. However, my findings suggested that MTAs reinforce the broader taboo and 'forever young' discourses that position the perimenopausal body as aging and abnormal, reinforcing the pressures on women to control and manage their experiences to avoid

being shamed, embarrassed and stigmatised. Firstly, further research is needed on MTAs to understand the discursive constructions enacted through them and the impact this has on lived experience. This is particularly true for diverse and marginalised identities, and in a New Zealand context. Secondly, further work is needed to critically evaluate MTAs and understand how these digital technologies privilege and reproduce discourses of normality, health, and personal responsibility. Finally, further work should seek to explore how women reject tracking their perimenopausal experiences, resist dominant perimenopause discourses, and how MTAs shape their experiences in ways they had not expected.

Implications for Women's Health

The findings from this study challenged the often-dominant biomedical framework that perimenopause is predominantly understood through, showing that perimenopause can also be constructed through natural, neoliberal, 'forever young', and taboo discourses. The participants often had to negotiate discursive tensions and their positionality, which impacted how they viewed the health system, medical professionals, and their own bodies. Based on these findings, New Zealand women's health services should be more holistic in the support they provide, acknowledging the socio-cultural factors that influence the experiences of perimenopause, rather than predominantly focusing on the biological. Additionally, some of the subject positions that were discussed, such as *dismissed patient,* showed that a greater effort needs to go into validating and supporting the experiences of perimenopausal women and that it is essential that we continue to build on our understanding of perimenopause.

Women's Health Future Research Recommendations

Further work is needed to explore how perimenopause is constructed across diverse and marginalised populations, which would include greater representation of Māori and Pasifika women, and different socio-economic groups. Focusing on the differences between these diverse groups and how they construct the phenomenon would allow for a deeper understanding of the discourses available across different circumstances in New Zealand.

Secondly, researchers could take a longitudinal approach that allows for the investigation into how their experiences and understanding of perimenopause and interactions with MTAs evolve and shift over time.

Limitations

Several limitations need to be acknowledged and discussed. While the number of participants (24) is relatively large for the type of analysis I have conducted, allowing for the collection of rich data that can be analysed in depth, this small sample is not statistically representative of the New Zealand population. Although this study prioritised diversity, each CI group that included people with diverse identities remained relatively small (two to three people in each). This may mean that, although the study included diverse individuals, there are still groups underrepresented in this sample (for example, Māori or Pasifika, LGBTIQ, or low socioeconomic groups). While the small sample size was not a limitation in relation to the analytical framework, given that depth was prioritised over breadth, it is considered a limitation when generalising these findings to the New Zealand population.

My analysis identified five discourses drawn on to construct perimenopause in a New Zealand context; however, these findings may not be generalisable to other contexts. Despite this, these findings could be cautiously theoretically generalisable to other Western contexts that have similarities to New Zealand. In addition, as our realities are socially constructed and reflect the discursive constructions and practices available to us now, these findings may not be transferable to historical or future times. Perimenopause is constantly evolving and changing, being a dynamic experience that changes across time.

Another limitation of this study was its reliance entirely on self-reported data. Participant accounts may have been influenced by social and cultural norms, especially as perimenopause is a taboo topic. The participants may have been cautious in their accounts, being aware of how they were perceived and wanting to conform to socially desirable positions. This may have resulted in participants accounting their experiences in ways that align with

social and cultural norms, and dominant discursive constructions of perimenopause. To minimise this influence, the research team ensured the CI groups were safe spaces, allowing participants to recall their experiences as they were perceived rather as they aligned with socially desirable perceptions.

Finally, all CI groups were conducted online rather than in person. Deeper understandings, engagements, and discussions may have occurred between the participants and the research team if the CI meetings had occurred in person. Additionally, because the methodological and theoretical framework meant research was conducted with participants rather than on them, the research team and I played a role in shaping the data and findings. While reflexivity was engaged throughout, I inevitably played a role in interpreting the data, which may have been influenced by shared understandings and my positionality.

Strengths

Several strengths of the research project need to be highlighted. These include the participant benefit, contributing knowledge and understanding to an under-researched area, and the choice of methodological and theoretical framework.

Benefit to Participants

Before beginning this research project, I was unaware of how much taboo and embarrassment continue to surround perimenopause. More importantly, I did not understand the extent to which women navigating perimenopause felt unheard, alone and invisible. A strength of this study was the benefits it offered participants, with many emphasising that perimenopause is not a topic generally openly discussed and were excited to help normalise the conversation. Throughout the data analysis process, I kept notes on participants' perceptions of the benefits they derived from participating in this research project. Some participants described feeling good about contributing to something bigger and, hopefully, improving insight into women's health for future generations. Many of the participants appreciated coming together, having the opportunity to engage in open and honest discussions, share their

stories, and be heard. A few participants expressed that, through the CI meetings, they felt a sense of community, connected with the other participants, and understood. Many participants shared that they learned a lot from being involved in the research, with one participant who has experienced a 'normal' women's health journey stating that she now has greater insight into what it is like for other women who do not have a typical health journey.

Choice of Methodological and Theoretical Framework

The carefully selected participatory CI method allowed the diverse voices of participants to be heard, which was crucial, as many participants identified with marginalised identities. CI allowed participants to lead the research in a direction that benefited them and to discuss their experiences in a safe space with people who identified similarly. The choice of FDA allowed the study to explore how perimenopause is constructed in women's talk and conversations, gaining a greater understanding of the broader discourses, power relations, socially constructed norms and assumptions, and dominant knowledge systems that influence their realities.

Contributing Knowledge and Understanding to an Under-Researched Topic

My research area is relatively novel. More research is being done to understand the experiences of perimenopause; however, it remains significantly under-researched. Many researchers have significantly contributed to the MTA research literature (Earle et al., 2021; Geampana, 2024; Pichon et al., 2022; Riley, Healy-Cullen, Rice, et al., 2025; Riley & Paskova, 2022; Sillence et al., 2025; Tylstedt et al., 2023), and many researchers have significantly contributed to understanding the experiences of perimenopause and menopause (Harper et al., 2022; Ray et al., 2023; Refaei et al., 2022; Richard-Davis et al., 2022). However, research examining both perimenopause and MTAs together is very limited.

The findings of this study showed that perimenopause is a socially constructed phenomenon, constructed through competing discourses. This aligned with the work of Atwood et al. (2008), who also discussed the experiences of perimenopause using a social

constructionist lens. My findings support their argument that perimenopause is constructed through shared social meaning. This study extends their work by focusing on the discursive influences that MTAs have on women's socially constructed understandings of perimenopause. My findings also aligned with research by Riley and Paskova (2022), which highlights that MTAs are not neutral and instead influence people's knowledge, perceptions, and experiences. This study extends their work by examining how technology shapes experience from a discursive standpoint rather than through a post-phenomenology framework, and begins to make sense of how people construct their experiences in their talk about perimenopause and use MTAs.

Conclusion

This study has shown that perimenopause cannot be reduced to a simple biological experience, but instead, it is a complex and socially constructed stage of life. Perimenopause is an experience that is constructed through intersecting discourses and digital technologies. By investigating how diverse women in Aotearoa/New Zealand talk about perimenopause and menstrual tracking apps, it highlights how the biomedical, natural, neoliberal, 'forever young', and taboo discourses are both resisted and reinforced by women in everyday sense-making. These findings show that MTAs are far from neutral and are more than a simple tool for tracking our bodies; they actively shape our experiences and how perimenopause is understood. This research highlights the need for further attention to and inquiry into midlife experiences and how digital technologies shape them.

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Appendices

Appendix A: Participant Information Sheet

A cooperative inquiry project on experiences of using menstruation tracking apps

Participant Information Form

Thank you for your interest in this project. The information below summarises the research and describes what being a participant will mean for you.
It's important that you understand what the project is about, but as you can see, when we write it all down there's a lot of paperwork! So if you would rather speak with someone, please text, call or email us using the contact details at the end of this document, and we will talk you through it.

About the Project
An estimated 200 million people worldwide regularly use period, fertility or menstrual tracking apps. This project wants to know what it is like using these apps. Especially when

- You're young and getting used to your menstruating body
- After pregnancy
- During perimenopause

We want to know what the experience is like of using these apps, how and if they affect the way you think about your body or yourself. Research also suggests that people really like these apps but they are also limiting. So we are interested in what happens when we bring a group of similar people together to explore what using these apps are like. Does thinking together help people find ways of using these apps that feel good? We hope that this will be a fun and interesting experience for those who participate in this project, and that our findings might contribute to the next generation of these apps.

About the Researchers
Hi, my name is Sarah Riley. I work at Massey University and I do research on women's health and identity. I'm working with a team of people on this project. I've listed them at the end of this form if you want to know more about them. Each person brings different expertise to the research which will help with analysis, what we share is an interest in women's health in digital spaces.

Who Can Take Part?
To take part in this study you must meet the following criteria:

- You have used a menstrual/period/ fertility tracking app for at least 3 months, and

Identify with one of the following cohorts:

- are 16-18 years old
- used after pregnancy in the last year
- are using an app during perimenopause (defined for the purposes of the study as the transition to menopause at the end of menstruation that typically occurs between 47-51 years).

We are especially keen to hear the perspectives of people who are often left out of research, including:

- sexually or gender diverse/takatāpui
- ethnic minorities
- Indigenous women/wāhine Māori
- women of colour
- disabled users
- people with chronic illnesses
- fat people
- those using the apps for reasons outside of fertility—including but not limited to perimenopause
- those involved in related political activism, e.g., feminists, period action.

What's Involved?

If you participate in the study, Sarah or one of the other members of the team, will include you in a group of approximately 5 people. You can ask to be put in a group, or you can suggest an existing group, such as a group of your friends.

The group will meet face-to-face or virtually on Zoom fortnightly for between 3 to 5 meetings, depending on your preference. Together we will reflect on how you use these apps, what you get out of using them, and what could be done differently. We will do this through discussion/ kōrero and activities designed to help creative thinking. For example, if you are going to introduce your app like a person at a party, what would you say?

The groups are called cooperative inquiry, because through group discussion people identify aspects of their experiences they want to understand better or differently – that they want to "inquire into". During the group meetings we discuss your experiences, and in-between meetings you do a small activity related to your inquiry. For example, this might mean noticing something more, or perhaps doing something different, such as checking your app more or less regularly and seeing how that makes you feel. This

quickly, and focusing on the technology rather than explicitly studying experiences of menstruation.

Each group will also discuss their own ground rules, and revisit these during the project to check they are working or if they need tweaking. These will include what we do if someone in the group becomes upset or has strong feelings as they reflect on their experiences.

If you find any area of the process to be uncomfortable, you can choose not to take part. As the researcher, I will be available to discuss any concerns you have throughout the project and I will have contact numbers available for you if you wish to seek professional support.

The nature of research in small groups involves discussions/ kōrero with other participants. We will ask group members to keep what is said in the group confidential, but we cannot guarantee this. So there is a risk that other group participants might disclose your involvement, identity or what you say to others in the focus group. Taking part in the project means that you are willing to accept this risk. If you change your mind, you can leave the group at any time.

The research is intended to have the following benefits:
1) the cooperative inquiry group method supports participants to define and inquire into what matters to them, and can give them new, more affirmative ways of thinking
2) insights from participants will be written up in academic publications and may impact on future app designs
3) those who use our story app may experience empowerment through new ways of thinking about relationships between menstruating bodies and digital technologies.
A gift voucher of $30 per meeting will be provided to each participant as a token of appreciation.

What's Next?
If you would like to take part in the study or have a chat with the researcher, please contact the research team at MTAresearchproject@massey.ac.nz.

Want to know more about the research team?
The team has worked on sensitive topics with diverse people, often in the fields of women's health and digital cultures.



Sarah Riley **Massey University New Zealand -** is a body image researcher, using cooperative inquiry and supporting early career researchers to do the same.

Siobhan Healy-Cullen **Massey University New Zealand -** works on topics related to young people's digital sexual citizenship.
Natasha Tassell-Matamua **Massey University New Zealand -** works in the field of indigenous psychologies
Tracy Morison **Massey University New Zealand -** works in the field of reproductive justice
Christine Stephens **Massey University New Zealand -** works in the field of older people's health
Alex Hawkey **University of Western Sydney -** works with marginalised women in women's health issues, including refugee women.
Adrienne Evans **Coventry University UK –** works in the field of digital cultures
Katrin Tiidenberg **Tallinn University Estonia -** works in the field of digital cultures
Astrid Ensslin **University of Bergen Norway -** works in the field of digital cultures
Carla Rice **University of Guelph Canada -** works in the fields of art and social justice
Jane Ussher **University of Western Sydney -** works in the field of woman's health
Deborah Lupton **University of New South Wales** works in the field of digital health

Appendix B: Participant Consent Form

I have read, and I understand, the Information Sheet attached. I have had the details of the study explained to me, my questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from participating the group discussions at any time without having to give a reason.

1. I understand that I have an obligation to respect the privacy of the other members of the group and I will not disclose any personal information that they share during our discussion.

2. I understand that all the information I provide will be kept confidential to the extent permitted by law, and the names of all people in the study will be kept confidential by the researcher.

Note: There are limits on confidentiality as there are no formal sanctions on other group participants from disclosing your involvement, identity or what you say to others in the focus group. There are risks in taking part in focus group research and taking part assumes that you are willing to assume those risks.

3. I agree to participate in the group discussions under the conditions set out in the Information Sheet.

4. I understand that I can withdraw from the inquiry group at any time before the group begins or while the group is in progress. But that it will not be possible to withdraw the information I provide after the group finishes, as it will be part of a discussion with other participants.

Declaration by Participant:

I _____ [print full name] hereby consent to take part in this study.

Signature: _____ **Date:** _____

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application NOR 22/34. If you have any concerns about the conduct of this research, please contact A/Prof Fiona Te Momo, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800, x 43347, email humanethicsnorth@massey.ac.nz .

CI research project on experiences of using menstruation tracking apps

A guide for running group sessions with a people who have recently had a baby.

If you take care of the process, the outcome will take care of itself.

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Reminder for facilitators: What are the CI sessions all about?

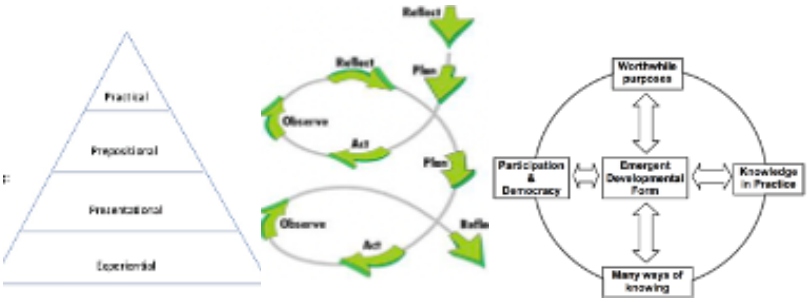
The aim is to explore the impact of Menstruation Tracking App (MTA) technologies for users in Aotearoa whose bodies or tracking goals do not fit within the narrow parameters of a 'typical' user.

Is based on the principles of cooperative enquiry:

- Similar people collaboratively explore issues of mutual concern -> new knowledge
- Following the rhythm of creative groups, paying attention to process
- Applying the core principles of action research in small groups:
- democratic
  - worthwhile purpose
  - cycles of action and reflection
  - emergent design
  - different levels of knowledge (experiential, presentational, propositional, practical)

Aims

- Create a validating, safe space, difference-attuned - with enough similarity to hold the difference.
- Facilitate participants to explore into their experiences of the issue, and through cycles of action and reflection develop new learning, that can facilitate better living/flourishing.



How the inquiry groups are run

Each meeting will be 1-hour, and each group will meet 3-5 times. Before each meeting the facilitators will draw up an outline plan (with Sarah), responding to the previous meeting. This is part of the emergent design. The aim is to get participants talking about their experiences

and exploring those experiences together and then in between meetings, feeling safe to explore, and take the inquiry in the direction that interests them. Facilitators are along for the ride, plus there to support them in this process of creative, collective thinking.

Facilitators follow a rough outline, designed to create a safe space within which participants can feel safe enough to explore their issues together, and be powered off, that during the meetings they can take ownership. For example, asking each other questions, directing the enquiry, asking facilitators for things e.g., information or suggestions for actions.

Starting point is that technology, bodies and identity interact, and shape how users think about themselves. Our job is to facilitate a space for them to enquire into the shared experiences, from which to identify issues they want to explore further, with the idea of better understanding their experiences/the system they are in from which they can identify new way of knowing or doing that facilitate / increased chance of flourishing.

Facilitator rules of thumb

Watch the energy: tried to keep the energy relatively high, you can do that for example through rounds where each person talks and takes turns relatively quickly, or activities, see below. Sometimes people will be talking and they're quite energetic, but perhaps they run out of steam and start to slow down/peter you might then, for example ask others for their perspectives. A powerful question we found last time was "Julie, you were nodding while Lucy was talking, did what she say resonate with you?"

Similarly, the group might have been listening intensely to something quite powerful, and then they've run out of energy to continue. It's almost like it's been sucked out of them, here is when you would find a way to 'lift' them. Especially if it's coming towards the end, you want them to be able to leave feeling affirmative and positive inside themselves, not vulnerable. See "bag of activities" section below, that we can draw on if we find ourselves in that situation.

If they are talking – let them get on with it (ignore your plan).

Have a 'bag of activities' – if they need them – e.g., addressing energy e.g., run out of steam, creating shifts in thinking e.g., if looping or sounding lost.

Examples of activities include.... drawing, free association, writing, taking photographs, etc. and see what participants think might be a useful way of researching and taking action to create space for multiple different ways of thinking about MTAs.

See the handouts (under 'reading list') from Jenny MacKewn – helpful when thinking about the multiple roles of facilitators.

Who will be at the CI sessions?

The session will involve members of the "research team" and up to four other "participants.", all can be considered co-researchers.

Here is a link to (confidential) participant information:

Here is a bit of information about each of the research team members:

Sarah Riley is a body image researcher, using corporative inquiry and supporting early career researchers to do the same.

Alex Hawkey works with marginalised women in women's health issues, including refugee women.

Siobhan Healy-Cullen works on topics related to young people's digital sexual citizenship.

Gwyn Easterbrook-Smith works on topics related to sex workers rights, postfeminism and transgender studies.

Kirsten Mullany is a health psychology student and Māori cofacilitator on the research team.

Outlines of our meetings

In the table below, we have summarised an outline of how the sessions can run.

First Meeting	Middle meetings	Last
Welcome & Karakia* Introductions • Participants introduce themselves. • Facilitators share brief intros and discuss their roles and app usage. Project & Method Overview	Welcome & Karakia Opening Activity • Three-Word Round: Each participant shares three words to describe how they feel, bringing them into the space. Reflection on Previous Actions • Each participant shares what they did	Welcome & Karakia Opening Activity • Three-Word Round: Each participant shares three words to describe how they feel, bringing them into the space. Reflections on Actions • Participants take turns discussing what

• Explain the project's focus on technology, women's bodies, and identity after having a baby. • Discuss how tracking apps shape sense of self. **Outline Session Aims** • Build group rapport, begin inquiry, and enjoy the process. • Outline the Cooperative Inquiry (CI) method and its action-reflection cycle. **Safety & Ground Rules** • Establish a safe, inclusive environment with group-agreed rules. • Encourage focusing on personal experiences rather than pre-existing knowledge. **Inquiry Launch** • "What is it about your experience of these apps that drew you to the project?"	and learned from their planned action. • Group collectively reflects on each person's experiences before moving to the next participant. **Group Reflection** • Discuss any shared learnings or significant developments that emerged from individual reflections. **Facilitator Support** • Offer prompts or activities if discussions slow down or become stuck. **Optional Discussion (if time permits)** • Explore what an affirmative app that meets participants' needs would look like. • A two-minute round of free association, considering how app usage has impacted participants' mind, body, relationships,	they did and learned from their actions. • The group collectively reflects on each person's input before moving to the next participant. **Discussion** • Facilitate an open discussion about the process, e.g., challenges, reflections on the research question(s), or key topics that have come up throughout the inquiry. • Review previous discussions to see if there's more to say or explore changes since the first meeting. **Closing Actions** • Reflect on the inquiry journey or identify key takeaways. **Final Reflection /Adjourning** • Acknowledge contributions by messaging appreciation for each

• Introduce "misfitting" as a concept for discussion. • Prompts for discussion (see plan for hui 1 below) **Action Planning** • Identify key insights from the discussion. • Suggest free writing and observation as a reflective exercise before the next meeting. **Next Steps & Closing** • Plan the next meeting, discuss staying in touch, and conclude with a quick round of reflections and a closing Karakia.	or sense of time/place. **Reflections on Previous Session** • Reads out a summary of topics covered last week and ask participants if they want to speak to any of the topics further. **Session Wrap-Up** • Summarise key points covered. • Invite participants to identify a new action for the next session. • Conclude with a final round where each participant shares how they are feeling, and a closing Karakia.	group member in the chat. **Wrap-Up** • Mention next steps, such as working with data and sharing preliminary findings. • Close with a three-word round on current feelings, and a closing Karakia.

*Karakia are Māori prayers or incantations. In Aotearoa New Zealand, beginning and ending a gathering with a Karakia fosters a sense of goodwill, calm and respect.

After each meeting, the research team will generate a summary and preliminary ideas about what we learned in the CI session. We will then use these learnings to inform the next meeting, and you can comment on these ideas if you want to.

CI plan for hui 1: Template/Example

Name	What age	How would you describe	How would you describe	To ensure the group meetings are accessibe and comfortable for you, please describe any special conditions or requirements.

	are you?	your gender identity?	your ethnic background?	
xx	xx	xx	xx	xx
xx	xx	xx	xx	xx

These details will be added by Siobhan based on the registration form.

OVERVIEW

1. Welcome, Karakia, introductions - to each other (Whakawhanaungatanga/getting to know each other)
   (15 mins)

2. Introduction to the aims of the project and method of inquiry
   - Aim of today
   - Aim of CI
   (10 mins)

3. Starting the inquiry: what is it about your experience of these apps that drew you to the project?
   (20 mins)

4. Planning action, quick review and karakia
   (15 mins)

2. Siobhan Welcome and give overview

OVERVIEW for Sodanin to put in chat:

- Welcome & Whakawhanaungatanga
- Introduction to the aims of the project and method of inquiry
- Starting the inquiry – kōrero
- Planning next steps

At any point if you've got questions or you want to stop for any reason just let me know, if you need to look after baby, turn your screen off, etc this is your space to do what works for you.

Sarah invite's Kirsten to lead the karakia

3. **Kirsten leads karakia**

4. **Sarah leads Introductions - to each other (Sarah and Kirsten introduce ourselves, then invite participants to do it)**

Sarah [te reo short one] - been in NZ 5 years, son/partner
(UK, digital but not MTA (step counter app/iphone health), one child – 16 (thinking about this group has brought all that back!) – long-term interest in gender)– lot of experience using the method of inquiry that we've got, but always a bit nervous for the first one - and excited)

Kirsten [te reo introduction] - my role in this project, anything else you want to say

Invite participants to introduce themselves as they would like to

8.15 ish

5. **Sarah Introduction to the aims of the project and method of inquiry**

Interested in the relationships between technology, bodies and identity, especially at a time of change such as after having a baby

(this project includes people transitioning to menopause, parents who have had a baby, and teenagers at a later date).

Starting point is that technology, bodies and identity interact; so that technology shapes how users think about themselves

tracking technologies for example can change your behaviour in the sense they require us to add data (perhaps changing our morning or evening routine) and they can shape our identities in terms of understanding selves to be healthy or to be good. Eg sleep tracker can make people feel bad

Start of our inquiry – **how do using these apps shape your sense of self and bodies – especially after having a baby**

Aims of today

- Get to know each other and feel for the research method.
- Start our inquiry. (by talking about your experiences – what brought you here today).
- Enjoy yourselves.

Aim of CI

Start with a bit about the method – CI - When people are brought together to think together about a shared experience, new and useful learning can happen (useful for participants and useful for researchers)

And that there are many ways of knowing, and it's important to create a space for them.

Similar to wānanga and the idea that everyone's kōrero is valid and needs to be heard.

In CI people meet at least three times so that can really think together about an issue that matters

start reflecting on their experiences (eg of using tracking apps after having a baby)

at the end of each session, decide want they to know more about - and with that an action to help with this.

For example, if we talked about the emotions we feel using technology, then an action might be to pay more attention to how you feel when you use it, or experiment with trying to change those emotions.

Then, when we come back together in the next hui - we talk about our experiences of doing that action, and reflect on what learning you've got from the action. (ok for action to fail – cos there' still learning)

This is called cycle of action and reflection - we can do these cycles each time we have a meeting. The joy of doing this is that it **allows something new to emerge between you that you can't create alone**.

To do this well, - (1) feel safe in the group, and (2) focus on experience first:

a) group needs to feel safe, and we can do this by, following some ground rules

- Listen to each other.
- Seek to build on other's contributions
- Share the airspace
- Make it safe and welcoming for people who have different experiences to contribute – respectful korero
- Keep what is said - and who said it – confidential (need to think through what this means in a friendship group – talk amongst yourself but not with others?)
- Interrupt Sarah or Kirsten, if you have a question/comment at any time

Main ones for CI in general, I'm wondering if there are any other ground rules you want to add? (we can revisit)

(safe = first thing) Second thing we need to do is

b) - **Focus on our experience**

(Often when we start to think about an issue, we say what we already know about it, but if we pay more attention to what our experience is actually like, we tend to notice other things, - so -> **we thought we would start with a question about your experience – going to ask what brought you to volunteer for this project** – before we do

Can we RECORD

5. **Kirsten - starting the inquiry: What is it about your experience of these apps that drew you to the project?**

Start doing this as a round - each person says as much as little or as you want and then let's use that as the launch pad for a korero or discussion. About 20 minutes to do this.

Prompts:

Themes, and/or similarities and differences in your experiences

What did you want from using these apps? What's the experience like

How does [using these apps] make you feel about yourself /your body

What's been the best experience

What's been the worst experience

SR Possibly introduce the concept of mis fitting (disabilities studies – the world is shaped for the able-bodied body, if you're not able bodied– you have to about negotiate a world not designed for you to use e.g. stairs instead of a slope) – does this idea of having to fit something not designed for you in mind - sound like your use of MTA?
Prompts – where does mis and fitting happen?

Back up activity: If you were going to introduce your app – what would you say? (what app do you use, how long have you been together, how was your relationship these days?). (or save to second hui)

(20 mins/finish by 8.50)

6. **Planning your action/s:** remind them about the action reflection cycle, power of cooperative inquiry is that you direct the inquiry, identify what's important in your life and what you want to know more about.

Round – what's stuck out for you in the korero so far?

Also suggest: in the next few days

Free writing (rules: writing, no stopping for editing or rereading for allotted period of time. Eg five minutes (what I think about my app..) - read and reflect, do another round eg 5 mins – to see what pops up – choose from that something to pay more attention to

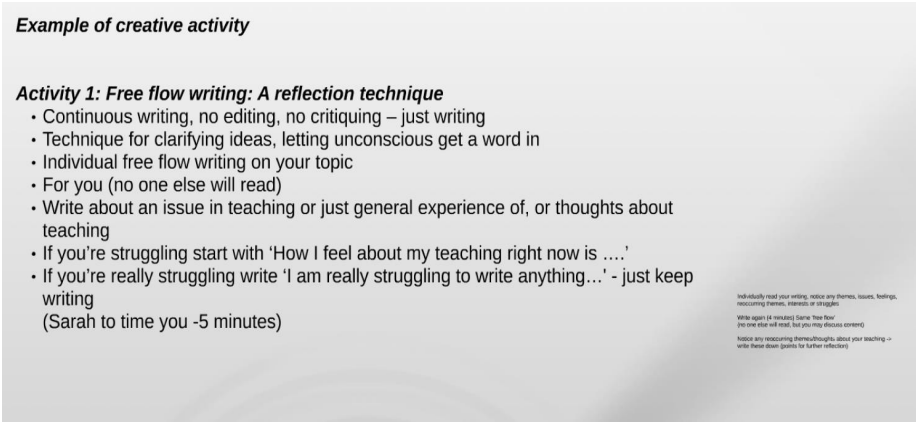
Pay more attention to that aspect of your app use – report back what you notice in the next meeting (siobhan can send you free writing rules plus doodle poll)

Finishing

Quick round, three words that describe how you're feeling about the project.
& karakia

Free writing activity instructions (to send via email):

Part one:



Part two:

Individually read your writing, notice any themes, issues, feelings, reoccurring themes, interests or struggles

Write again (4 minutes) Same 'free flow'
(no one else will read, but you may discuss content)

Notice any reoccurring themes/thoughts about your teaching -> write these down (points for further reflection)

CI plan for middle hui: Template/Example

OVERVIEW (facilitator to pop into chat)

1. Welcome back!
2. Introduction to the aims today and outline
   (10 mins)
3. Reflections on actions
   (15-20 mins)
3. Reflections on free writing
   (10mins)
4. Reflections on topics covered last week or issues from today you want to pick up on – the 2-minute talking challenge
   Back up – draw individually and show (bring pen?) and talk
   (10 mins)
5. Planning action, quick review and close
   (10 mins)

1. Welcome back

Super excited to see you!

This is the plan - explain overview.

Last time we saw you, you had a couple of actions, but you also covered a lot of ground in your discussion. So today we thought we would cover:

- Reflections on actions

- Reflections on free writing
- Reflections on topics covered last week or issues from today you want to pick up on – the 2-minute talking challenge – more info later

Facilitator to put the above overview in the chat.

But before, lets catch up

Quick catch up – how are people feeling – what are we bringing into the room? Three-word round.

Can we record now?

3. Reflections on actions

Take it in turns: outcome of actions (allocate time for each person to describe direction, and experiences, and then to discuss together)

4. Reflections on free writing

Take it in turns: outcome of free writing if you did it (need to keep an eye on the time)

5. Reflections on covered last week or issues that have come up today

Facilitator to read out summary of topics – other facilitator to put summary in chat.

Covered a lot of ground last time as well, so we thought we would bring a summary back of those topics in case there's anything that you want to return to.

and explain the two minute challenge.
Each person is given two minutes (timed) to talk out loud about what come up for them - have to fill that space. Reason - having that time challenge and other things bubble to the surface (warning, some people find it easier than others!).

Who wants to go first in the 2-minute challenge?
What sticks out for you, what does the other person notice/ stick out for them?

Note: if they have not talked about why they are in the same group (e.g., weight stigma, chronic health condition) give a heads up that it is something we could talk about next week if they want.

6. Finishing

What would like to learn more about? What actions do you think might help with that?

Practicalities: next meeting time, are we finishing next meeting or would you like one more?

One word round to finish, how are we feeling?

Karakia.

CI plan for final hui: Template/Example

OVERVIEW (facilitator to pop into chat)

1. Welcome back
2. Introduction to the aims today and outline
   (10 mins)
3. Reflections on actions
   (10-15 mins)
4. Discussion

- topic challenge - what do you want to talk about – e.g., any more reflections on our research question?
- Mind, body, place, space, relationships, identity game
- and/or talk about things that we've covered previously - review these and the other list from the first meeting and ask them if anything has changed?
  (25 mins)

5. Closing action
   (10 mins)

1. Welcome back

Karakia

This is the plan (facilitator to put overview in the chat):

- Reflections on actions
- Discussion - our last session – Review topics to see if there's anything more you want to say on these, consider what we've not said, anything else want to discuss?
- Reflection across the inquiry
- Closing actions (and what we plan to do next)

1. Lets check in -

Quick catch up – how are people feeling – what are we bringing into the room? Three-word round.

Record now?

2. Reflections on actions

Take it in turns to tell and then discuss each one.

3. Further discussion

3.1 on what we covered last week

Facilitator to read out summary of topics - say "when I am reading out, note if there is anything you want to discuss further? Or anything that you haven't mentioned yet?"

(other facilitator to put summary in chat)

Anything you want to discuss further? Or anything that you haven't mentioned yet?

3.2 Our RQ has been – *how these apps shape understandings of users' bodies, sense of self and place in the world*

Could discuss generally, or do round –

How has it shaped your:

Mind: e.g. Thoughts; Expectations; Identities

Body: e.g. New knowledge; focus on hormones; noticing sensations

Relationships: e.g. With partners, others, with baby

Sense of time or place: e.g. when you track, how you are in certain place

4. **Finishing (need at least 10 mins) (mourning/adjourning stage!)**

Reflection across the inquiry –

a. If this was a journey, how would you describe it?

b. Or if the above question doesn't work that well try: What are your take-home points of learning?

Important to acknowledge the end of something, so we've got finally activity for you:

(put all of this in the chat, so if I finish messaging before somebody else, they've got something to think about)

Use the chat function to message each person, something you appreciated about their contribution – "I appreciated it when you …"

Then in rounds:

Something you've learnt/ going to take away from this experience/do differently.

3 word round to finish, how are we feeling?

What's next: we're going to be working with the data for a bit, and then will host an event to share the preliminary findings.

Karakia

Bag of activities! Post pregnancy cohort

Some example activities designed to facilitate thinking are:

(a) introducing your app as if you were introducing someone at a party, reflect on what was said, similarities and differences in the group;

(b) drawing your journey of using MTAs;

2 min talking

What comes to mind when ...e g getting period back – in the chat

(c) freeing-up thinking activities designed to bring ideas to the surface, which would be chosen to best meet the needs of the group, and can include free writing or drawing, individual or collective collage making, listening pairs, screenshots or memory work. For example, if giving them a free writing activity, give 4-5 minutes, give them the rules (will need to ask them to bring a pen and paper beforehand). Then ask them to read over what they've written, and share what they want to share. And what action that might lead to. (let people know they can change their mind and do the same thing as somebody else, if that resonates with them);

(d) Keeping energy up e.g., using rounds. each person takes a turn to say something, for example, a free association game. Start the time for two minutes and say what comes to mind in relation to how tech is shaping:

- Bodies
- Minds
- Relationships
- Spirituality
- Sense of place and space

(e) Appreciative inquiry questions. AI is an approach that seeks to understand the system by asking appreciative questions (where your energy goes, your attention follows. We might explore what kind of questions would work for this project.);

(f) What would an affirmative app/an app that met your needs look like for you? (note to facilitators: our findings will help inform an interactive MTA story app that draws attention to, disrupts and revisions the current norms and ideals embedded in MTA.);

(g) What would you like to know more about in relation to your experiences of using tracking apps to manage during post pregnancy? Maybe put that on a new point in the *jam board* that they can then write to;

(h) Using the jam board (if we know they like to use tech)! - how does tech shape our sense of self/when and where activity (we could do this as a brainstorming activity, invite them to reflect on when and where they use the technology, and what daily experiences are like (e.g., first thing in the morning, notifications etc.). One facilitator to type up what they say on the

jam board (or miro/mural?) – can move the text so we can start to theme them if we see similarities. In group discuss:

- What do you notice?
- How does [your group identity] shape these experiences
- Any feelings on the board or that have come from seeing the board/experiences displayed like this?
- Other?

(i) Screenshots of / tell us what your app is telling you today? Maybe an action could be to add to a google doc some screenshots of the app throughout the week.

(j) This is your inquiry – what do you want to inquire? And *how* do you want to inquire into this? What questions do you have for one another?

Other suggestions are welcome – any member of the group might propose an alternative method for us to explore.

What happens after each session?

After the session, a member of the research team will upload the recording and transcription. Before the next session, someone will review the transcript and summarise what was covered. This will then be shared with the group at the next session, and participants will be invited to comment further.

Facilitators will have a debrief with each other, if Sarah is involved, or have a debrief with each other and Sarah.

If participants wish to **discuss or debrief** anything that came up during the session, a member of the research team will be available for the 30 minutes following the session. There is information about **additional support** in the information sheet (Appendix A).

Introduction to the aims of the project and method of inquiry: Extended 'script'

So i will give you a brief overview of the aims of the project and method of inquiry. So our research focuses on understanding how our sense of our bodies and identities evolves, especially during significant life transitions. In the previous phase of our project, we were particularly interested in the perimenopause experience because it's often hard to pinpoint—many people feel uncertain about whether they're experiencing it or not, and that can be really isolating.

So our starting point is thinking about how tracking technologies shape our sense of self and sense of identity. So basically, using a tracking app might shape how we feel about ourselves. Some people report feeling good or bad depending on what their sleep tracker says about the night's sleep they've just had! Our interest lies in how these apps, often designed for regular, predictable bodies, work for the diverse bodies we actually have. Many of these apps are designed with a 'standard' body in mind, which doesn't always reflect our lived experiences. Particularly, if you have recently had a baby, and your body is going through a transition.

So we're curious about how you use these apps, the challenges you face when using them, how you navigate those challenges, and what you find helpful about them. That's the focus of our inquiry: how you're experiencing and using these apps. And of course, how that intersects with wider experiences of healthcare as a new parent in New Zealand specifically. So today, we'll get into the research project, ~~get into the kōrero~~, learn about your experiences, and just enjoy ourselves. We had really good fun doing the groups with the perimenopause cohort, and there was a real sense of kinship and solidarity in the group. So i hope we can create something similar for you.

The aim of cooperative inquiry, the method that we're using, is to bring people with similar experiences together to think deeply about those experiences. This method helps us as researchers understand your perspectives, but it also offers you the chance to think about and learn from your own life in new ways. Because of this in depth nature of the method, we need to meet at least three times. The first meeting is for getting to know each other and getting into the discussion a wee bit, the second is to dive into the topics relating to your tracking apps that we decide to explore, and the third is to wrap up. But, we've allowed for up to five meetings, depending on how things go, and we can review that as we move forward.

The cooperative inquiry process operates through action-reflection cycles. We reflect together on your experiences, identify something you want to explore further, and then decide on an action to learn more about that issue. For example, if we discuss emotions, like how we feel about a racker, we might decide to explore those feelings more deeply—perhaps by noticing or experimenting with different ways of engaging with the tracker. Then,

when we meet again, we'll reflect on what happened during that action. Did it work? What did you learn? It doesn't matter if it doesn't work, because you're still learning. It's just a wee experiment. The idea is that this process of action and reflection helps us learn collectively, in ways we couldn't achieve alone.

To make this work, we need to focus on two key things: creating a safe space and talking about our experiences… Alex, I might pass to you here, and you can segue into our group 'rules' 😊

Reading list

faciliation as complex systems copy.pdf

faciliation group stages for faciliator copy.pdf

Facilitation action research in the moment MACKEWN.pdf

facilitation notes copy.pdf

Benabdallah et al 2023 A notebook of data imaginaries.pdf

Lupton et al., 2023_UNSW_BookletofArtworks final downloadable PDF.pdf

Lupton et al., 2023_UNSW_More-Than-Human Wellbeing_web_final.pdf

Appendix D: Research Proposal

Proposal	Contact PI's Surname	Initials	Application Number	Panel
Standard	Riley	SCE	22-MAU-020	SOC

1D. SUMMARY

Millions of people worldwide use digital applications (apps) to monitor their menstrual cycles. These apps can be experienced as empowering, but they are not neutral. They play a role in how users understand their bodies, and by extension, their selves, relationships, and place in the world. Importantly, menstrual tracking apps are designed around a prototypical user: a white, affluent, cisgender, heterosexual, able-bodied, young woman, which reinforces narrow, potentially harmful, ideas about "normal" or ideal bodies. It is therefore important to ask: What are the experiences of the many non-prototypical users, whose bodies, identities, or life stages are marginalised by these apps?

To understand the experiences of these menstrual tracking app users in Aotearoa New Zealand, we will conduct participatory research with users from three life-stage cohorts: 16- to 18-year-olds, post-natal, and perimenopausal. The findings will grant unprecedented insight into how the apps shape diverse users' understandings of their bodies. Participants will generate ideas on how these apps might be designed to be affirmative and inclusive. We will use this knowledge to create a story-driven app that affirms diverse embodied experiences, and to amplify marginalised voices, advance the field of digital health, and envision possibilities for these technologies in the future.

2A. BACKGROUND

Most women menstruate for approximately four decades of their lives, often using bodily management practices.[1] Menstrual tracking apps (MTAs) are a recent response to this, involving users sharing intimate personal information that is algorithmically processed to provide insights about their bodies. These digital technologies offer greater control and better knowledge about menstruation but may reinforce narrow ideas about what constitutes "normal" or preferable bodies and bodily experiences.[2-4] MTA use has grown exponentially, with 500 million downloads and over 200 million people worldwide now regularly interacting with this technology, making MTAs amongst the most popular of digital health applications.[4-6] With these numbers, **MTAs can potentially shape millions of people's understandings of their bodies, and by extension, their selves, relationships and places in the world.**[3,7-12] Yet research on users' experiences barely exists outside the concerns of the prototypical or stereotypical user: a young, cisgender, heterosexual, able bodied, affluent, white woman.[2,3,6,7,13-19] **By focusing on diverse users' experiences, we propose to shape the field of MTA research and open new avenues for understanding contemporary relationships between bodies, identities, and digital technologies.**

MTAs are also known as period, ovulation or fertility tracking apps, and are marketed to women, but we use the more inclusive term "menstrual tracking apps" to recognise the diversity of users who menstruate, including trans and non-binary people. MTA users input a range of intimate data, including bleeding onset, blood flow quality, cervix mucus consistency, sexual activity, emotions, medications and temperature. Through commercially protected algorithms, MTAs process these data to offer information and predictions on ovulation, pre-menstruation, and menstruation, and engage users through notifications, pop-ups, in-app charts, articles and product links. These user-app interactions elicit thoughts and feelings in users that produce "affective atmospheres", making these technologies "lively".[20-22] Optimism characterises the affective atmosphere of MTAs, with users invited to feel empowered through the prediction and control of their bodies, aligning with culturally valued western norms of self-management.[2,3,8,14] For example, the two most popular apps - *Flo* and *Clue* - invite users to "take full control of your health with the app" and "make empowered health choices" (https://helloclue.com and https://flo.health).

Studies show that this language of empowerment resonates with MTA users, who report feelings of autonomy and self-control through better understanding and predicting of their bodily processes. These predictions are used to manage fertility, communicate with healthcare professionals, and plan work and social schedules.[5,7,13, 15,16,18,22-30] Our current work (in submission) also shows a pedagogy of *appreciation*, in which MTA users learn to love their menstruating body, even when it is painful or difficult to manage (Riley & Paskova). MTAs therefore appear to offer a radical, affirmative intervention that aligns with a new visibility of menstruation and period positivity. This affirming orientation contrasts with wider cultures of stigma, shame, and embarrassment within which menstruators often report hating their menstruating body.[1,31-34]

However, the affirmative potential is reduced when MTAs construct norms positioning certain bodies, identities, and life-stages as preferred or ideal.[3,7,8,10,12,13,14,25,29,35,36] Meeting these norms may lead to pleasure for some, whilst failing to can provoke distress and anxiety in others. For example, when the app classifies users cycles as "irregular," users report interpreting their bodies as "broken", even though irregular cycles are the norm in the menstruating population (Riley & Paskova).[2,14,16,25,29] Notions of a controllable body are also ableist,[37,38] and narrow gendered visual codes of pink and "girly" dominate the interfaces.[24,25] MTAs also employ a biological essentialism that reduces women to hormones and fertility cycles, perpetuate taboos and assumes users are heterosexual, white, youthful, cisgendered consumers managing fertility.[2,3,6,7,9,10,13-19,39,40,81] These normative constructs are regulatory and marginalise many users, including those who are sexuality or gender diverse/takatāpui, ethnic minorities, Indigenous women/wāhine Māori, women of colour, disabled, chronically ill, trans and gender non-binary users, and those using MTAs for reasons outside of fertility including at the beginning and end of the menstrual life stages. There is no research prioritising such users.

We also do not know how those with diverse bodies, identities, or life stages experience in-app marketing in MTAs, given that the convergence of commercial interests and datafication can produce advertising experienced as invasive or distressing.[8,25,41] Our work in submission shows that

MTA users experience such unwanted advertising as akin to being followed by a "creep". MTAs therefore have potential to contribute to an already crowded landscape of networked misogyny that is often directed more aggressively towards women with less social-structural privilege.[42,43] The concerns outlined above sit alongside problems with data privacy, surveillance and security,[6,8,36,40,44-48] inaccurate predictions,[4-7,12,18,49-52] a lack of health professional or user involvement in design development,[6,12,37,49,52,53] and users' labour involved in data inputting.[30,47] Combined, these concerns highlight the need for new empirical research capable of exploring the complexity and nuance of MTAs for users whose bodies, identities or life stages marginalise them within the norms and commercial landscape of these technologies.

To theorise this complexity, **we draw on 'postfeminist healthism',** a concept developed by the PI and colleagues that describes a cultural imperative for women to work on their bodies to meet narrow cultural ideals of healthy embodied femininity *and* to understand this work as empowering and a measure of their morality and citizenship.[55] Postfeminism addresses a range of female-identified people, but the ideals of health and femininity in postfeminist healthism are linked to socio-cultural privilege (e.g., being affluent, white, cisgendered, heterosexual and heterosexually attractive) and thus are rendered unattainable for many.[54-58] So, while fulfilling gendered cultural norms may be experienced as desirable and empowering, these norms can direct people's desires towards unattainable or toxic ideals,[55,57] such as in the above-outlined desire for a "regular" cycle. Postfeminist healthism can, therefore, account for the affective atmosphere of optimism in MTAs and offers a framework for analysis of digital technologies as embedded within complex flows of norms, ideals, discourses, and desires that may be potentially harmful. Digital health technologies marketed to women often reflect a postfeminist sensibility.[55-58] Yet, we can find no published studies focusing on MTA explicitly that link these apps with postfeminism, with the outcome that current scholarship fails to benefit from the nuanced analysis of power that it offers.

We also draw on Black feminist theories of **intersectionality** to recognise the interrelations between people's diverse social locations (e.g., age, gender, sexuality, ethnicity, dis/ability, racialised position) and the social privileges or disadvantages that these afford when negotiating postfeminist healthism.[59-60] We team this recognition with Lugones' decolonial theory of subjectivities at the intersections, where fractures in subjective experience produced by colonising forces on bodies can be used to disrupt existing meaning-making and facilitate more affirmative thinking of bodies as multifaceted and heterogeneous.[61] Lugones' philosophy is also useful for deconstructing the western body standards evident in MTAs' promise of a knowable, controllable human body. To this, we add the perspective of **feminist new materialism** for understanding human and nonhuman relations, affective atmospheres and the 'lively' nature of MTA technology as entangled within dynamic, mutually co-constitutive processes that involve affect, the materiality of bodies and technologies, and discourse (including postfeminism).[30,37,62-63] Conceptualising MTAs as occurring within postfeminist healthism, and through theories of intersectionality and feminist new materialism, is a novel approach to the study of MTA, and informs our aims and objectives.

2B. OVERALL AIM OF THE RESEARCH

We aim to advance knowledge of the relationships between bodies, identities and digital health technologies marketed to women through a trans-disciplinary project that shapes the emerging field of critical digital health studies. We aim to generate theoretically informed, novel understandings of digital app use that will have significant scholarly impact and advance knowledge of the ways these popular apps can potentially improve people's lives and health by being more inclusive. We will achieve our aims by meeting three objectives:

Obj. 1: **Develop a theoretical framework** advancing thinking on the complex and dynamic relationships between people's bodies, feelings, identities and emerging digital app technologies.

Obj. 2: **Conduct participatory action research** with diverse users of MTAs in three life stage cohorts to

2.1. gain unprecedented insight how these apps shape understandings of users' bodies, sense of self and place in the world *and*

2.2. facilitate the generation of new, affirmative understandings and determine how MTAs might be designed for such users.

Obj. 3: **Create a story-driven app** to disrupt and reimagine the current norms of data-driven MTAs, affirm diverse embodied experiences, and create alternative possibilities for these technologies into the future.

2C. PROPOSED RESEARCH

Mapping onto these objectives, we plan three phases of knowledge production: (1) theory development, (2) participatory action research with MTA users, and (3) story-app co-design.

Work package 1: Theory development. There are tensions within poststructuralism and feminist new materialism that we will fruitfully explore to generate substantial theoretical insights into gendered digital technology. We will examine how the work of Braidotti, Barad, Deleuze, Foucault, Lugones and others, can be read through the lenses of postfeminist healthism and intersectionality, to advance theoretical thinking of human-digital relations. We will "think-with" this theory when we analyse our data produced in work package 2, creating a dialogue between theory development and data analysis that will strengthen the rigour of both, and advance new avenues for research.

Work package 2: Cooperative Inquiry (CI) is a participatory method, where trained researchers facilitate small groups of participants to define and develop an inquiry into a shared experience as a means by which to generate new, more affirmative knowledge and ways of being.[64,65] Both the process and the new understandings it produces comprise our empirical data. CI offers an innovative method in the study of digital health. CI is designed to generate rich and nuanced understanding through deep engagement with women's voices and will significantly advance current MTA social research that uses surveys and interviews. The CI research questions are:

1. *How do app users with diverse bodies/identities/different life stages experience MTAs?*
   i. *What understandings of their bodies are produced?*
   ii. *What affective atmospheres circulate and with what effects for users' experiences?*
2. *When supported to enquire into their experiences, what new, affirmative understandings of menstruating/bleeding bodies, as they intersect with digital technology, do app users generate?*

Sampling and design: Taking a life stage approach, three cohorts of MTA users will be recruited, representing key moments in menstruators' lives that are scant or non-existent in current MTA research. Participants will need to speak and read English and be currently using MTAs.

Cohort 1: Teenage app users (16-18 years-old). Menarche and the following early years of menstruation require significant physiological and psychological adjustment. For example, menstruation can be irregular and more painful in the early years and makes girls (racialised girls in particular) vulnerable to wider discourses of early sexualisation.[60,66-68] Given that menarche typically ranges from 9-16 years, our 16- to 18-year-old cohort will be ideally placed to reflect on these experiences as they intersected with MTA use and their wider socio-cultural, embodied positions.

Cohort 2: Post-natal users. To date, we can find no published research explicitly on users of MTAs after pregnancy. Yet for those who have children, pregnancy and breastfeeding interrupt the menstrual cycle, requiring women and gender non-binary users to re-learn embodied experiences post-pregnancy; experiences that may differ from their pre-pregnancy cycles.

Cohort 3: Perimenopausal users. Features for managing perimenopause are limited in MTAs, marginalising users at this often-stigmatised[69,70] transition to menopause and the end of menstruation (approx. 47-55 years); research on MTA users in perimenopause is also limited.[25,37,71,72]

Recruitment strategies: To this life stage approach, we add a commitment to diversity by drawing on, and developing, the research team's existing relationships and approaching: (1) existing groups in the Wellington region where the PI/postdoc are based, run by and for people who identify as ethnic, sexuality or gender diverse/takatāpui (including trans), as disabled or with specific chronic illness (e.g., endometriosis, Long COVID), or for mothers in low-income neighbourhoods or within low-medium decile schools (e.g., feminist, digital technology or media studies school clubs); and (2) relevant NGOs and SMEs across Aotearoa New Zealand (e.g., period underwear, providers of menstrual products for low-income people). We will further expand our recruitment reach with targeted Instagram advertising and Facebook groups. Groups that serve Māori with whom team members have relationships, will also be approached. Throughout recruitment, we will

tailor our language to meet the needs of the groups we approach; for example, for sexuality or gender diverse/takatāpui groups we will use terms like "cyclical bleeding" that do not connote womanhood. To facilitate accessibility, CI groups will be held virtually or in physical spaces in Wellington that are familiar, comfortable, and easily accessible for the participants. We will explore options for childcare for the postnatal group (e.g., Massey Education student volunteers). Māori-only groups will be available for up to 15 participants, in recognition of mātauranga Māori framing of menstruation as tapu, women's role as whare tāngata, and the ongoing trauma of colonisation on women's experiences of their bodies.[73,74] The Māori-only groups will be facilitated by a Māori Masters student co-supervised by Associate Prof Tassell-Matamua (a Kaupapa Māori research expert), and the PI; the other groups will be facilitated by either Prof Riley, Dr Hawkey or the postdoc fellow, with approximately five participants per group. Participants can volunteer individually or in friendship/existing groups to provide already established relationships on which to build. Careful consideration of their shared characteristics (e.g., gender and sexual identification) will structure how we organise individuals into groups. The characteristics of each group will be determined through this process, creating a purposeful, emergent recruitment process completed when the required number of CI groups form, see table below.

	16-18 years	Postnatal	Perimenopause	Total no.
Riley, Hawkey, postdoc	3 groups of 5	3 groups of 5	3 groups of 5	45
Māori Masters student	1 group of 5	1 group of 5	1 group of 5	15

CI is collaborative, with participants developing together the questions that they wish to explore and thus the direction of inquiry. They do this through cycles of action (e.g., paying attention, acting differently, asking others to act differently) and reflection on what they learnt by doing this action. This action-reflection cycle creates opportunities for a transformative process of creating new understandings. CI stands in contrast to single-engagement interview or focus group qualitative research designs. CI requires more commitment by participants, but they, and the project, benefit substantially from the kind of thinking that can only come from in-depth engagement with an issue. These benefits can be substantial because CI helps unpack existing thinking to consciously develop new frameworks that feel more affirmative or liberatory. The facilitation activities researchers use to support this thinking are also designed to be enjoyable. Participant retention is therefore usually high. Participants will also receive a thank you for their time with a $30 voucher per meeting. Because of the emergent collaborative design, only the first meeting can be fully mapped out, which we present here as an example of a CI meeting: 1) Whanaungatanga, kōrero of principles of CI and ground rules, 2) activities designed to facilitate thinking: (a) draw and discuss your journey of using MTA (b) freeing-up thinking activities designed to bring ideas to the surface that can include writing, collage, screenshots or memory work; (3) review the meeting activities, what sticks out worthy of inquiry? Plan action towards learning more about that issue.

Mitigating risks: We plan a long recruitment time to build relationships with marginalised groups, multiple methods of participant recruitment are planned, and the substantial networks of the research team leveraged. Five participants per CI group is small enough for all voices to be heard, but large enough to function with dropout; dropout is minimised through management of expectations during recruitment and care for nurturing of relationships as groups form and throughout the inquiry. Pilot and previous studies evidence the feasibility of participant commitment to such projects. Use of MTAs is likely to be widespread given that 40% of women in Aotearoa are aged between 15–45, and over 80% of the population own at least one smartphone.[6] Members from each community of the CI groups will participate in an advisory group so that representatives with diverse experiences are involved in the development and translation of findings, including benefits to their communities. Prof Riley and Dr Hawkey have expertise in critical thinking activities for a range of ages, identities, and literacy levels, to map the activities to the needs/interests of these groups to make participation an enjoyable and enhancing experience.

Data analysis: CI groups will be audio recorded, transcribed, and analysed to examine the affective atmospheres and experiences of subjectivity and bodies that are produced through MTA use. We will examine the interrelationships between the sociocultural positions participants occupy; wider discourses (e.g., postfeminist healthism); and the technological infrastructure and affordances

of MTA.[63,75-77] The analysis will draw on work package 2 (theory development) to advance existing methods of analysis.

Work package 3: Create a non-commercial, open access, story-driven MTA. Christine Wilks is a multimedia storyteller who creates online interactive stories as a medium for facilitating critical thinking about a complex issue. In her collaborations with Riley, Enslin, and Rice, Wilks uses this medium as a form of electronic bibliotherapy,[78-80] where the reader/player engages with fictional characters to explore a repertoire of responses to body image challenges, thus building resilience. In that project, Wilks' digital story offers a mirror to the reader/player, and resources for dealing with common challenges identified through research. The proposed project further extends the medium by inviting the reader/player to step through the mirror and into a different, and not yet possible world of new, more affirmative relations between bodies, identities and MTAs. Wilk's MTA will be story driven rather than data driven (like existing MTAs). Drawing on Lugones' philosophy that forms part of our theoretical framework, Wilks will use storytelling to explore fractures in understanding to disrupt current norms and ideals, question the design language of the apps, and re-vision the experience of MTA use. Wilks will use the analysis from the CI groups, and at key milestones in development she will seek feedback from the research team, advisory board, and any interested research participants, creating a co-design process. The story-MTA will harness the medium of creative storytelling to extend understanding of MTA beyond that produced by the academic analysis and participant inquiry in work package 2. It aligns with feminist speculative design,[17,34] and will foreground accessibility on financial (open access), technological (usability) and conceptual (inclusivity) levels. It will be disseminated to relevant stakeholder groups: users, app developers, and the Ministry of Health Emerging Health Technology Team to offer new directions for thinking.

Outcomes of the Research

With its substantial vision, enacted by experts in multiple relevant fields, the proposed study is poised to make an exceptional contribution to research and public understanding. Each work package represents ground-breaking research that will have substantial international scholarly impact. Drawing on the strengths of our large research team, we anticipate eight publications in high impact, social scientific, health and methods journals (*Women's Reproductive Health*, *Body Image*, *Feminism & Psychology*, *Digital Health*, *New Media & Society*, *AlterNative*, *Action Research*, *Theory & Psychology*); and at least three conference presentations (British Psychology Society, European Health Psychology, New Zealand Psychology Society). **These outputs will make a significant scholarly contribution to the fields of digital health, women's health, critical health psychology, gender studies, new media, feminist science and design, and critical digital studies.**

We will also contribute to public knowledge through articles for The Conversation, blogs for the International Society for Critical Health Psychology, Centre for Indigenous Psychologies, and Women of Wearables; and through existing relationships with journalists at *New Zealand Herald* and *Stuff* who have previously published Prof Riley's body image research. The international team will also disseminate project findings. The story-MTA will be free to play, hosted on Wilks' server, and linked to the websites of the organisations with whom we partnered in the recruitment phase. A dedicated project website will run throughout the project, disseminating its aims and outputs. These activities will contribute to **translational outcomes of amplifying currently marginalised voices of MTA users and building researcher capacity in relation to innovative participatory methods.** MTAs are already part of "a crowded market"[81] and developers are seeking points of difference. Our horizon-expanding research is likely to receive enhanced attention in such a market, supporting future research and development (e.g., with a Marsden Catalyst and subsequent MBIE grant to work with app developers).

Ethics: An ethics application is submitted. Feminist and CI research is underpinned by a relationship of care,[65,82] which aligns with a Māori-centred ethical framework including kia tūpato (to be careful), kia āta-kōrero (robust discussion) and kia āta-whiriwhiri (consciously determine) the conditions which allow the project to kia āta-haere (proceed with understanding). The team will

draw on its significant expertise in working with diverse people in relation to bodily experiences.[31,32,60,66,67,68,69,70] Ethical issues include written and ongoing verbal consent, confidentiality, anonymity, data security, co-creating group ground rules, creating a safe and supportive environment to talk, attention to the nuances of participants' intersecting positions of identity, and emphasising participants' expertise in their own lives and as co-creators of research knowledge. Discussing bodies can bring with it legacy of past structural trauma; attention to this possibility will be used to minimise replaying it in the research space. The activities are designed to be enjoyable. Ongoing reflexivity and co-supervision are part of the practice for CI facilitators to enhance participant well-being and minimise harm. Participants will receive a summary of the findings and a link to the project website to access the story-MTA and publications. Benefits of the project for participants: (1) being able to inquire into what matters to them and (2) develop affirmative ways of thinking; benefits at societal level: (1) potential to impact on subsequent MTA designs, (2) new ways of thinking about relationships between menstruating bodies and digital technologies from playing the story-MTA. Taking a feminist new materialist approach involves prioritising political awareness in research and we are especially cognisant of the colonial context of Aotearoa New Zealand and the need to work safely and appropriately with Māori participants.

2D. VISION MĀTAURANGA

Associate Professor Tassell-Matamua brings Kaupapa Māori research expertise and will act as cultural consultant throughout the project. There are no Aotearoa New Zealand-made MTA[49] yet, given MTA prevalence, it is likely that wāhine Māori/takatāpui are using MTA, despite not being the imagined prototypical user. For Māori, ontological, epistemological, psychological, and spiritual harms suffered because of colonisation may be exacerbated by MTA. This includes understandings about the tapu nature of menstruation/cyclical bleeding and its implicit link with wairua – which are absent in MTA. Because there has been no explicit study on Māori experiences of MTA, we do not know. Addressing this gap, the proposed study should benefit Māori because (1) in CI participants inquire into what matters to them, (2) insights from Māori participants will be incorporated into knowledge production about MTA which has marginalised Indigenous knowledge and perspectives, this may impact on subsequent MTA designs, (3) playing the story-MTA may feel affirmative.

We recognise Māori expertise and experience, heterogeneity, and are sensitive to layers of complexity, including how the three cohorts map onto different moments in wāhine Māori sacredness as whare tāngata. Members of the research team will familiarise themselves with Māori understandings of te awa atua.[73,74] A Māori-centred approach will be enacted through care of relationships that align with manaakitanga and the CI structure that would be recognisable as wānanga. We will seek to uplift participants through an extended recruitment process that develops connections between researchers and participants; check for any restrictions in what might be asked; and ascertain what tikanga participants want included (e.g., Karakia; offered in a way that avoids whakamā for those less connected to their culture); any in-person meetings will serve kai as one expression of manaakitanga. CI facilitators will seek to work in humility.

In relation to Te Tiriti, participation occurs through the participatory design of CI; protection through care to be mana enhancing, including regular checking-in with the participants and not making generalisations from the findings. Partnership is enacted in recognising data sovereignty by (1) not archiving data where it can be used by non-Māori, (2) inviting Māori participants to decide how much of their discussions are shared with the larger team, and (3) being transparent about data use. Data will be stored for five years by Tassell-Matamua rather than the PI (Riley) who is non-Māori.

The Masters project will employ Kaupapa Māori approaches[83] to inform the development and implementation of the research and will contribute to mātauranga through its grounding in experiential Māori knowledge. Dissemination through the Centre for Indigenous Psychologies and other women's reproductive health networks that serve Māori will help the project to break out of familiar 'report and publish' formats and deliver knowledge that is valuable to Māori networks. **Cultural consultation** was with Natasha Tassell-Matamua and Aorangi Kora Durie, as rangatahi wahine.