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**Expert Online Coaching for Menopause: A Qualitative Investigation into the Effectiveness
of a Multi-Disciplinary Wellness Coaching Intervention**

A thesis presented in partial fulfilment for the degree of

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ABSTRACT

Introduction: Menopause is a biological process that all women will traverse as they age into midlife. Physical, emotional, and mental changes are the hallmark of this process, with some women requiring intervention to improve quality of life.

Aim: This pilot study had two aims. The first was to explore the lived experience of women with menopause. The second was to qualitatively evaluate the effective components of a menopause wellness coaching intervention and its implementation.

Methods: Semi-structured interviews were conducted with women who enrolled in the wellness coaching programme pilot. Interviews were conducted prior to beginning the programme (baseline), and halfway through the programme (midpoint). They were conducted from June to September 2025. Interviews were audio recorded, transcribed, and thematically analysed.

Results: 12 women were interviewed in total (12 at baseline, seven at midpoint). Baseline interviews identified four key themes for women's experience with menopause: lack of knowledge of menopause, menopause as a taboo topic, impact of menopause on daily life, wanting to feel supported with menopause. Midpoint interviews identified four key themes from engagement with the programme: a need for empathetic coaching, barriers to engaging in behaviour change, practical tips to enhance lifestyle, and improvement in holistic wellbeing. Women all reported a lack of knowledge of menopause and found that engagement in the programme was facilitated due to the empathetic approach of the coaches, and there was an improvement in overall wellbeing at the midpoint of the intervention.

Findings: The findings demonstrated a landscape for women with menopause which has lacked information, placed a taboo on speaking of it, leading to women struggling with symptoms and seeking support. Wellness coaching interventions can begin to address these pain points, providing women with practical tips and emotional support to manage this stage of their life. Further studies should be conducted to evaluate the impact of a holistic wellness coaching intervention, to identify the total efficacy of wellness coaching programme to improve QoL in women with menopause.

Keywords: menopause, lived experience, wellness coaching, holistic wellbeing

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LIST OF ABBREVIATIONS AND SYMBOLS

Table 1.

List of abbreviations & symbols

Abbreviation or symbol	Definition
AMS	Australasian Menopause Society
CBT	Cognitive behavioural therapy
CBT-I	Cognitive behavioural therapy for insomnia
FMP	Final menstrual period
FSH	Follicle stimulating hormone
HT	Hormone therapy
ISI	Insomnia severity index
LH	Luteinising hormone
MsFLASH	Menopause Strategies – Finding Lasting Answers for Symptoms and Health
PEN	Practice-based Evidence in Nutrition
POAS	Penn Ovarian Aging Study
PSQI	Pittsburgh sleep quality index
QoL	Quality of life
SDT	Self-determination Theory
STRAW	Stages of Reproductive Aging Workshop
SWAN	Study of Women’s Health Across the Nation
VMS	Vasomotor symptoms
VTE	Venous thromboembolism
WAVS	Women’s Study for the Alleviation of Vasomotor Symptoms

CHAPTER 1: INTRODUCTION

The proportion of women in their midlife (40-60 years old \pm 10 years) is increasing exponentially; over 25% of the world's population is made up of women over 50 years old (Infurna et al., 2020; Kirchengast, 2024). Women experience unique stressors during the midlife, from looking after aging parents to coping with an 'empty nest' as children move on from the home (Thomas et al., 2018). Among these stressors is the biological process of menopause, often associated with acute symptomatology and stark physical changes not experienced prior (Kirchengast, 2024; Thomas et al., 2018). Menopause itself is the overarching term colloquially designated to describe the end of a woman's reproductive life (Gatenby & Simpson, 2024), and is marked by a final menstrual period (FMP) indicating a loss of ovarian reproductive function (Broekmans et al., 2009; Hall, 2015). An official diagnosis of menopause is made retrospectively; it is confirmed once a woman has had no menstrual period for 12 months, thus confirming her last menstrual period was the FMP (Soules et al., 2001; Talaulikar, 2022). On average women are 51 when menopause is diagnosed, however women can experience this earlier (Gatenby & Simpson, 2024).

Menopause, often considered with a medical lens due to its physiology, occurs within the everchanging social and psychosocial lifestyle of women, which is not oft acknowledged (Kirchengast, 2024). Women feel unprepared, shame around their symptoms, and less able to manage their commitments such as work due to this abrupt shift in physiology (Wood et al., 2025). The impact of menopause on women's mental and physical health cannot be overstated, with women invested in finding increased support during this time of life (Wood et al., 2025).

The progression of menopause physiology can be understood through the marked stages of reproductive aging (Harlow et al., 2012). It can be understood that the stages of reproductive aging for women progress through three phases: the reproductive stage, the menopausal transition, and postmenopause (Harlow et al., 2012). The menopausal transition is characterised by an irregular menstrual cycle with variable length and flow, indicating the beginning of 'menopause' (Harlow et al., 2012; Soules et al., 2001). Also known as

perimenopause, the time spent in this stage can range from 5 – 10 years (Harlow et al., 2012). Postmenopause is then confirmed 12 months after the FMP (Davis et al., 2023; Soules et al., 2001) at which point a woman is considered to be in postmenopause for the rest of her life (Soules et al., 2001).

Women experience a myriad of physical, emotional, hormonal, and mental changes throughout the menopausal transition and into postmenopause (Davis et al., 2023) as a result of fluctuations in key reproductive hormones including oestrogen and follicle stimulating hormone (FSH) (Davis et al., 2023; Freeman et al., 2007). These hormone fluctuations are also associated with an increased risk of developing non-communicable disease, such as cardiovascular disease and metabolic syndrome, for women entering the menopausal transition (Madsen et al., 2023). Alarming, many women experience severe symptoms throughout this reproductive stage, hereby called menopausal symptoms, and report a lower quality of life (QoL) as a result of these (Hutchings et al., 2023). Common symptoms reported by women include vasomotor (VSM) changes such as hot flushes and night sweats; depressed mood; sleep disturbances such as insomnia; and urogenital symptoms (Bromberger et al., 2007; Chenji et al., 2024; Freeman et al., 2007; Freeman et al., 2006). Generally, a woman is expected to experience an increase in frequency and intensity of symptoms as she progresses through the menopausal transition, followed by a gradual decrease in symptoms after the FMP as the key reproductive hormone fluctuations settle to their new normal (Bromberger et al., 2007; Hutchings et al., 2023). Despite this expectation, some women will continue to experience menopausal symptoms during postmenopause (Hutchings et al., 2023). The variable and potentially severe symptoms associated with the menopausal transition is a clear treatment concern (Baber et al., 2016; Madsen et al., 2023). Current evidence recommends menopausal hormone therapy (HT) as the first-line treatment to address these concerns (Baber et al., 2016; Madsen et al., 2023), followed by antidepressants and over-the-counter supplements as second-line interventions (Baber et al., 2016; DePree et al., 2024; Kingsberg et al., 2024). Menopausal HT is indicated first due to its purported efficacy at offsetting hormone fluctuations and reducing symptom load, particularly hot flushes (Baber et al., 2016; Madsen et al., 2023). However, while HT is the current recommendation for treatment, its provision requires a careful risk-benefit assessment as the long-term safety is not yet known (Baber et al., 2016; Madsen et al.,

2023). In fact, the Women's Health Initiative Hormone Therapy Trials indicated a primary safety concern between menopausal HT and incidence of cardiovascular events and invasive breast cancer, leading to controversy regarding its use (Manson et al., 2020). However, the International Menopause Society supports the use of MHT and confidently addresses controversy regarding its utilisation in the menopausal population, presenting the '5Ws of prescribing MHT' (Who is eligible, What types of HT are available, When to start, Why to start, Where to get HT) to support understanding of MHT and its safety, efficacy, and benefit even in women considered to be high-risk for treatment (Panay et al., 2024). Despite support for MHT from bodies such as the International Menopause Society, healthcare professionals are still hesitant to prescribe MHT due to knowledge gaps regarding MHT and concerns of the long-term risk (DePree et al., 2024; Götze Eriksson et al., 2025; Lin et al., 2020; Yeganeh et al., 2017). Furthermore, there are disparities in MHT prescription globally; women in low- and middle-income countries experience higher economic barriers to accessing this treatment than those in high-income countries (Delanerolle et al., 2025; Islam et al., 2025). Of women who do receive MHT, DePree et al. (2024) found that 41% of women experience a lack of effectiveness of medication to address menopausal symptoms, with the majority of women indicating an openness to trying a new non-HT treatment. Indeed, there are emerging treatments to address menopausal symptoms which women can access and implement with minimal cost which are relevant to their lifestyle, removing barriers such as ability to access treatment or safety concerns of treatment.

Women are more actively seeking out alternative treatments to address menopausal symptoms and increase QoL. In low-and middle-income countries physicians favour alternative approaches over MHT in response to the preference of women (Islam et al., 2025). Lifestyle changes are one such alternative treatment which are growing in popularity (Kingsberg et al., 2024). Interest in this space has increased exponentially in response to the mixed perspectives and efficacy of current treatments to address menopausal symptoms, and the increased awareness of behaviour change as a tool to address these (Baber et al., 2016; DePree et al., 2024). Kingsberg et al. (2024) demonstrated that 78.3% of women with moderate-severe VMS engaged in lifestyle changes such as increasing physical activity and good nutrition to manage their symptoms. There is increasing evidence for the efficacy of lifestyle changes on menopausal symptoms: women who engaged in physical activity

experienced reduced VSM and total symptoms (Javadivala et al., 2020; Money et al., 2024), and women who followed a low-fat high-fibre diet intervention experienced a decrease in VSM symptoms (Barnard et al., 2023; Kahleova et al., 2023). However, the efficacy of lifestyle interventions are dependent on the continued engagement of people in these behaviours, an important caveat when discussing lifestyle-based interventions. Nutrition intervention studies report a 49.3% attrition rate and a 37.8% rate of difficulty of adherence (Crichton et al., 2012); this trend being reflected in physical activity interventions where rates of attrition range from 25-50%, and adherence rates of only 66% (Linke et al., 2011). This indicates that while these tailored interventions are effective for the percentage of participants who comply, there are inherent challenges in maintaining participants throughout the length of the intervention, and for them to comply throughout the whole intervention.

Cognitive behavioural therapy (CBT) is another alternative effective treatment for menopausal symptoms (Hunter, 2021). Women who engaged in cognitive behavioural therapy (CBT) for insomnia (CBT-I) demonstrated a significant increase in sleep efficiency and quality and a decrease in VMS symptoms compared to women who received no treatment (Ayers et al., 2012), menopause education control (McCurry et al., 2016), anti-depressants (Guthrie et al., 2018), omega-3 capsules (Guthrie et al., 2018), and regular exercise (Guthrie et al., 2018). Similarly, engagement with a self-help CBT booklet improved QoL for menopausal women in the workplace (Hardy et al., 2018). Despite this reported efficacy there are multiple barriers to accessing alternative treatments. This includes the medicalisation of the menopause transition which does not adequately address the wider impact of menopause; the cost of access to services which offer nutrition, exercise, or mental wellbeing support; the lack of availability of support services such as psychologists; non-offering or nonbelief in non-hormonal treatments; GPs not knowing when to refer women on to specialist support (Barber & Charles, 2023; Delanerolle et al., 2025; O'Reilly et al., 2023).

Evidence for alternative treatments for menopause has increased interest in wellness coaching programmes. Wellness coaching is a health intervention designed to improve individual health without the use of medication (Fujimoto, 2017), with a key focus on behaviour change and goal setting to make sustainable lifestyle changes to address quality of life (Fujimoto, 2017; Rodrigo et al., 2023). While behaviour change is considered the

foundation for effective lifestyle change interventions (Matthews et al., 2024), behavioural control is posited as a key barrier for adopting lifestyle change (Khademi et al., 2024). Wellness coaching aims to address this barrier through the provision of autonomy, information, and a flexible approach to adoption to individuals to support long-term change (Matthews et al., 2024). Researchers have suggested that wellness coaching interventions which adopt an individualised approach can improve QoL of participants, reduce depressive symptoms and stress symptoms, enhance sleep hygiene, and increase engagement in lifestyle factors such as healthy eating and physical activity (Clark et al., 2014; DeJesus et al., 2018). Furthermore, these behavioural changes are sustained beyond completion of the intervention (Clark et al., 2014; DeJesus et al., 2018). Dietitians are well placed to provide evidence-based nutrition information in the context of wellness coaching; individuals who received dietitian support alongside behaviour change theory in a coaching service demonstrated significant improvements in lifestyle change, reporting these changes as sustainable (Haugen & Franta, 2024). Women who engaged in wellness coaching for menopause experienced an improved self-efficacy (Fujimoto, 2017), an overall reduction in menopausal symptoms (Shokri-Ghadikolaei et al., 2022), and a decrease in depressive symptoms (Almeida et al., 2016; Shokri-Ghadikolaei et al., 2022).

Wellness coaching is not without its limitations. The literature is sparse, and the articles available have significant heterogeneity in their reporting, methods, and participants (Ahmann et al., 2023). Furthermore, while Ahmann et al. (2023) acknowledge that sustained improvements in health promoting behaviours and wellbeing are often reported, they also make it clear they are not reported as statistically significant, nor with having a large effect size. Factors such as time commitments, cultural appropriateness, and access to resources are barriers for people to participate in wellness coaching, meaning these interventions are not accessible for all people who could benefit (Jansen et al., 2024). Therefore, while the literature in this area is sparse, and access issues are clear, there is emerging evidence to suggest that wellness coaching is an effective way to support behaviour change and alleviate menopausal symptoms in women.

Current wellness coaching opportunities in Aotearoa New Zealand (NZ) for women traversing through menopause include 1-on-1 sessions or 12-week programmes advertised online.

Examples of available services are: Menopause & Wellness (<https://www.menopause.org.nz/>), The Menopause Vitality Programme (<https://lyndalovattladytalk.co.nz/menopause-vitality-programme-2025>) and Kaha Mna (<https://kahamna.nz/>). The cost of 1-on-1 sessions begin at ~\$200, while no price is advertised for the 12-week programmes. This is not to say the programmes are free; rather the price is hidden until you contact the programme co-ordinator for a quote. These companies showcase client success stories and emphasise the lived experience of the practitioner to demonstrate that the programmes are evidence-based and have efficacy. However, none of these programmes have validated theoretical frameworks apparent on their website in which their health coaching is based off, and other than client success stories do not have validated measures of their ability to deliver on what they are aiming to achieve. This is a barrier to understanding if these programmes will provide significant outcomes for the women enrolled, and whether the cost barrier is indicative of the benefit potentially provided.

Overall, studies investigating the current treatments for menopause and perspectives of these treatments have demonstrated a need for alternative treatments to support women throughout the menopausal transition (DePree et al., 2024). Wellness coaching for menopause is emerging as a promising alternative treatment focussing on lifestyle changes, and further research should be conducted to accurately identify the behavioural changes and implementation of these which are indicated in improving health outcomes (Barnard et al., 2023; Hardy et al., 2018; Kahleova et al., 2023; Kingsberg et al., 2024). This will help support the further development of wellness coaching interventions to more successfully support women throughout the menopausal transition.

This research will consider the efficacy of a menopausal wellness coaching programme retailed at \$900 on improving menopausal symptoms and QoL. Simultaneously, this research will begin to provide evidence towards the development of frameworks underpinning wellness coaching design which support menopausal women, and can be implemented in further wellness coaching programmes. The programme is conducted completely online, and is designed around four pillars of health with an aim of improving wellbeing – nutrition, exercise, mental wellbeing, and sleep. Women engage in 10 sessions: an initial goal setting

session, two sessions of each of the pillars, and a final progress review session. Within these pillars are multiple coaches with qualifications and expertise in the area for women to choose from to support them. The programme recommends pacing the sessions over 16 weeks, however this is not a set timeframe; women can book and attend sessions at their own pace. This programme takes a holistic approach to wellbeing, where the women choose what they want to learn, and make steps towards their own goals with individualised support from the expert coaches.

1.1 Summary and Justification for Research

Menopause will impact the majority of women. Symptoms associated with this stage of reproductive aging impact women at varying degrees, with many women reporting considerably lowered QoL as a result (Freeman et al., 2007; Hutchings et al., 2023). Current treatments to address menopausal symptoms do not meet the needs of all women (DePree et al., 2024), with more women moving towards alternative approaches to managing these symptoms (DePree et al., 2024; Kingsberg et al., 2024). Lifestyle changes, CBT-I, and self-help CBT have demonstrated efficacy at reducing menopausal symptoms and improving menopausal QoL in this population (Barnard et al., 2023; Hardy et al., 2018; Kahleova et al., 2023; Kingsberg et al., 2024), inspiring the development of wellness coaching interventions incorporating these principles via a tailored intervention to individuals needs and wants (Almeida et al., 2016; Fujimoto, 2017; Rodrigo et al., 2023; Shokri-Ghadikolaei et al., 2022). This pilot study should contribute to and strengthen the existing knowledge of wellness coaching for menopause by investigating the impact and experience of women engaged in wellness coaching. This research can then be used to help inform menopause interventions going forward to ensure they are targeted to the women engaged, and effective to support quality of life for women transitioning through menopause.

1.2 Purpose of the Study

The overall purpose of this study is to add to the body of evidence supporting wellness coaching for menopause as an effective treatment to improve menopausal quality of life. This study will provide information on the lived experience of women going through

menopause and their experience within a wellness coaching programme designed to support them through menopause. The information gathered may inform future wellness coaching programme development, as well as highlight what women want and their pain points experienced when looking to address their menopausal symptoms.

1.3 Aims & Objectives

Aims

To investigate the impact of a wellness coaching programme for perimenopausal and postmenopausal women on their experience with menopause, and understand what elements of the programme were particularly effective.

Objectives

1. Qualitatively evaluate the lived experience of women traversing menopause through semi-structured interviews to understand their experience with menopause prior to engagement, and their reasons for engaging in the programme.
2. Qualitatively evaluate the effectiveness of the wellness coaching programme through semi-structured interviews to understand what aspects of the programme were beneficial for women, considering both programme content and method of delivery.

1.4 Thesis Structure

This thesis is divided into four chapters. The introductory chapter provides background information regarding menopause, the research questions, and aims and objectives of the present study. Chapter two presents the relevant literature to the topic of menopause, interventions for menopausal symptoms, and the potential efficacy of wellness coaching for menopause. Chapter three then provides a research manuscript for the study, including an abstract, introduction, methods, results, discussion, and conclusion. Chapter four concludes the thesis, providing information on the limitations of the present study, and next steps for further research in this space.

1.5 Contribution of Researchers

Table 2.

Contribution of researchers

Name	Contribution
Karis Irwin-Gordon MSc Nutrition & Dietetics Student	The primary author of thesis who assisted ethics application, conducted the literature review, developed interview schedules and interviewed participants, transcribed and thematically analysed the data, interpreted results and presented findings.
Assoc. Prof. Andrew Foskett Primary Supervisor	Provided review and approval of thesis chapters prior to submission.
Dr. Kirsty Furness Co-Supervisor	Assisted with ethics application. Provided review and approval of thesis chapters prior to submission.
Dr. Jared Carpendale Qualitative Analysis	Provided qualitative guidance for analysis and interpretation of data. Also provided support writing methodology and review of thesis chapter 3.
Prof. Ajmol Ali	Conceptualisation of project. Provided review and feedback on early documentation for thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will review the literature concerning menopause; its physiology, symptoms, and current treatments; before considering the current evidence base surrounding alternative treatments such as lifestyle interventions for menopause and their efficacy. This literature review will focus on VMS, mood changes, and insomnia as the key symptoms due to their incidence being highest in the population, and consider predominantly the natural menopause. MEDLINE/Pubmed, Scopus and Google Scholar were searched using specific search terms as detailed in Table 3. Searches were filtered using the databases inbuilt filtering system to manage the large return of journal articles under the desired search terms. The reference list of relevant articles were also checked to find further appropriate literature.

Table 3.

Literature review search strategy

Date searched: January 2025 - October 2025
Search terms: Menopaus* OR perimenopaus* OR postmenopaus* AND defin* AND sympto* AND hormone therapy, menopausal hormone therapy, HT, AND exercise AND nutrition, diet AND sleep AND cognitive behavioural therapy, CBT AND wellness coaching OR health coaching
Filters: past 5 years, English language, female, human
Electronic Databases: MEDLINE/PubMed, Scopus, Google Scholar

Studies were included in the below tables (Tables 4-10) so long as they met inclusion criteria in Table 3.

2.2 Menopause Overview

2.2.1 Menopause Definition & Types

Menopause is the term attributed to designate the end of a woman's reproductive life (Ambikairajah et al., 2022; Gatenby & Simpson, 2024). It is characterised by the permanent cessation of menstruation resulting from a loss of ovarian function, at which point a woman becomes infertile (Broekmans et al., 2009; Davis et al., 2023). Primarily menopause will occur spontaneously as a result of the natural process of ageing resulting from a gradual reduction in ovarian function (Ambikairajah et al., 2022; Pillay & Manyonda, 2022; Secoşan et al., 2019). (Ambikairajah et al., 2022; Pillay & Manyonda, 2022; Secoşan et al., 2019). The age a woman begins spontaneous menopause on average is 45-55 years (Ceylan & Özerdoğan, 2015); it is not possible to predict onset of menopause for a woman due to the complex interaction of lifestyle factors and genetics which modulate this onset (Ceylan & Özerdoğan, 2015; Gold et al., 2013). Alternatively, menopause can be induced; it is characterised by a sudden drop in ovarian function in response to medication or surgery, and occurs in pre-menopausal women who would not otherwise have entered menopause yet (Archibald et al., 2006; Pillay & Manyonda, 2022; Secoşan et al., 2019).

2.2.2 Physiology of Menopause

A woman's reproductive lifespan is determined by the number of oocytes (eggs) or ovarian follicles a woman has, and the rate at which they are depleted (Wang et al., 2023). For the purpose of this section, oocytes and ovarian follicles will be used interchangeably. Oocytes are finite; a woman is born with a certain amount, therefore menopause begins once the oocyte number becomes low (Thurston et al., 2025; Wang et al., 2023). Premenopausal woman generally experience regular menstrual cycles through the controlled release of reproductive hormones to stimulate oocytes including: follicle stimulating hormone (FSH), anti-mullerian hormone (AMH), oestradiol (a type of oestrogen), and inhibin B (Davis et al., 2015; Thurston et al., 2025). The release of FSH stimulates the ovarian follicles to release oestradiol and inhibin B; whose release acts to regulate the FSH levels dependent on the

stage of the menstrual cycle (Davis et al., 2015; Thurston et al., 2025). As the number of ovarian follicles depletes oestradiol and inhibin B are released in smaller quantities which diminished their effect on controlling FSH release; as a result FSH becomes elevated (Broekmans et al., 2009; Davis et al., 2015; Thurston et al., 2025). Indeed, elevated FSH is a hallmark of the beginning of menopause, and is implicated in the irregularity of menstrual flow and a higher likelihood of cycles being anovulatory (Broekmans et al., 2009). FSH remains high for the remainder of a woman's life (Su & Freeman, 2013; Thurston et al., 2025). AMH release is also diminished as ovarian follicles deplete, as its role in maintaining ovarian reserves is no longer required, signifying the beginning of menopause (Soares et al., 2020; Su & Freeman, 2013). It is important to note that while oestradiol release does decrease relative to a decrease in ovarian follicles, it remains at relatively stable levels until menstruation ceases, at which point oestradiol very steeply declines and stabilises low (Thurston et al., 2025; Turek & Gąsior, 2023). Overall, a woman's reproductive hormones widely fluctuate throughout her lifespan, signifying the beginning of menopause and the end of reproductive life.

2.2.3 Stages of Menopause

Despite prevalent use of the term menopause to refer to all aspects of reproductive ageing, it fails to acknowledge the multiple stages a woman progresses through during her lifespan (Ambikairajah et al., 2022; Davis et al., 2015; Soules et al., 2001). Historically there has been an inconsistent use of nomenclature to represent reproductive ageing, both in the literature and in practice (Ambikairajah et al., 2022), prompting the development of the Stages of Reproductive Aging Workshop (STRAW) to stage and standardise classification of reproductive ageing (Harlow et al., 2012; Soules et al., 2001). The STRAW guidelines (Figure 1) divide the woman's reproductive lifespan into three subsequent phases: i) reproductive, ii) the menopausal transition (including perimenopause), and iii) postmenopause (Harlow et al., 2012; Soules et al., 2001). Across the three phases are seven stages spanning from -5 to +2, demonstrated in Figure 1, each attributed to distinctive parts of reproductive ageing which can be distinguished between using factors of menstrual cycle variation, supportive criteria of endocrine changes, antral follicle counts, and descriptive characteristics (Harlow et al., 2012; Soules et al., 2001). For the purposes of this review we will consider stages -2 to +2

representing the progression from the early menopausal transition to late postmenopause (Harlow et al., 2012).

Figure 1.

Straw+10 staging criteria

Stage	-5	-4	-3b	-3a	-2	-1	+1 a	+1b	+1c	+2
Terminology	REPRODUCTIVE				MENOPAUSAL TRANSITION		POSTMENOPAUSE			
	Early	Peak	Late		Early	Late	Early			Late
					Perimenopause					
Duration	variable				variable	1-3 years	2 years (1+1)	3-6 years	Remaining lifespan	
PRINCIPAL CRITERIA										
Menstrual Cycle	Variable to regular	Regular	Regular	Subtle changes in Flow/Length	Variable Length Persistent ≥ 7 -day difference in length of consecutive cycles	Interval of amenorrhea of ≥ 60 days				
SUPPORTIVE CRITERIA										
Endocrine FSH AMH Inhibin B			Low Low	Variable* Low Low	\uparrow Variable* Low Low	\uparrow >25 IU/L** Low Low	\uparrow Variable Low Low	Stabilizes Very Low Very Low		
Antral Follicle Count			Low	Low	Low	Low	Very Low	Very Low		
DESCRIPTIVE CHARACTERISTICS										
Symptoms						Vasomotor symptoms Likely	Vasomotor symptoms Most Likely			Increasing symptoms of urogenital atrophy

* Blood draw on cycle days 2-5 \uparrow = elevated
 **Approximate expected level based on assays using current international pituitary standard⁶⁷⁻⁶⁹

Note. From “Executive summary of the Stages of Reproductive Aging Workshop + 10: addressing the unfinished agenda of staging reproductive aging” by S. Harlow et al., 2012, *Menopause*, 19(4), p. 387-395. (doi: 10.1097/gme.0b013e31824d8f40).

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The menopausal transition is split into two stages: -2 representing the early menopausal transition, and -1 for the late menopausal transition (Harlow et al., 2012). A woman will begin to experience a variation in menstrual cycle length and a variation in FSH, AMH, and inhibin B during stage -2, and will progress to stage -1 once the intervals between menstrual cycles is ≥ 60 days with continued variation in key endocrine hormones (Harlow et al., 2012). Stage -2 will last for a variable amount of time, and stage -1 will last for 1-3 years with women more likely to experience key menopausal symptoms over this time (Harlow et al., 2012; Soules et al., 2001). Postmenopause is then characterised by two stages: +1 indicating early postmenopause and +2 indicating late postmenopause (Harlow et al., 2012; Soules et

al., 2001). Between the menopausal transition and postmenopause is stage 0, denoted by the final menstrual period (Harlow et al., 2012; Soules et al., 2001). Stage +1 is split into three substages: 1a, 1b, 1c, due to marked variation in aforementioned reproductive hormones throughout this stage (Harlow et al., 2012; Soules et al., 2001). Stage 1a denotes the time in which a woman is not officially yet postmenopausal, but is technically postmenopausal, as postmenopause is only determined 12 months after the FMP (Harlow et al., 2012; Soules et al., 2001). A woman will continue to have fluctuating endocrine hormones, however the antral follicle count becomes very low (Harlow et al., 2012; Soules et al., 2001). Therefore, stage 1a lasts 1 year until postmenopause can be confidently diagnosed (Harlow et al., 2012; Soules et al., 2001). It is important to note that the term perimenopause is used to encompass the earlier menopausal transition as well as this first stage of postmenopause, covering stages -2 to +1a. (Harlow et al., 2012; Soules et al., 2001). Stage 1b is then the second year of postmenopause, once postmenopause is confirmed, but has the same defining characteristics as stage 1a (Harlow et al., 2012; Soules et al., 2001). During these first two substages women have the highest likelihood of experiencing menopausal symptoms (Harlow et al., 2012; Soules et al., 2001). Stage 1c then continues for 3-6 years depending on the woman and is associated with the stabilisation of endocrine hormones (Harlow et al., 2012; Soules et al., 2001). Stage +2 is late postmenopause and continues for the rest of a woman's lifespan (Harlow et al., 2012; Soules et al., 2001). It is clear that the process of reproductive ageing is associated with multiple endocrine changes, menstrual variations, and descriptive characteristics. Acknowledging the complexity of menopause as a whole will allow for women to be more accurately diagnosed and treated based on their staging. Formal integration of this nomenclature into the literature and practice henceforth should be prioritised for future. From here, correct terminology will be used in this review.

2.3 Menopausal Symptoms

2.3.1 Menopausal Symptoms Overview

Women traversing through the menopausal transition are likely to experience a range of adverse symptoms (Santoro et al., 2015; Thurston et al., 2025). This section of the review will focus on the three symptoms most definitively attributed to menopause, the proposed physiology, and the impact of these on women's quality of life (QoL). Vasomotor symptoms

(VMS), sleep disturbances, and mood changes are most frequently reported in menopausal women; where VMS refers to the symptoms of night sweats and hot flushes (Santoro et al., 2015; Thurston et al., 2025). To contextualise the prevalence, up to 85% of women will experience hot flushes, 50% of women experience sleep disturbances, and women who are menopausal are at a 3-fold risk of developing major depression during this time (Santoro et al., 2015). These symptoms are generally attributed to the fluctuations in reproductive hormones including FSH and oestradiol (Taulikar, 2022; Thurston et al., 2025). Despite this attribution, not all women experience symptoms (Santoro et al., 2015; Taulikar, 2022), and those who experience symptoms will not always experience the same symptoms (Fang et al., 2024; Harlow et al., 2017; Taulikar, 2022; Tang et al., 2025), nor will they experience them at the same severity and frequency (Fang et al., 2024; Harlow et al., 2017; Masjoudi et al., 2017). Furthermore, it can become challenging to distinguish between age-related symptoms and menopause-specific symptoms, particularly as women progress through postmenopause (Santoro et al., 2015). A small proportion of women will continue to experience VMS, sleep disturbances, and/or mood changes into postmenopause (Avis et al., 2015; Masjoudi et al., 2017). Thus, menopause-specific symptoms and their varied presentation provide challenges for women to first identify and consequently manage.

2.3.2 Menopausal Quality of Life

The World Health Organization (WHO) defines quality of life as *“an individual’s perception of their position of life in the context of the cluster and value systems in which they live and in relation to their goals, expectations, standards and concerns”* (World Health Organization, 1997). Menopausal QoL therefore refers to the self-perceived QoL women have while progressing through the menopausal transition and into postmenopause (Hutchings et al., 2023; Kavga et al., 2024; Taebi et al., 2018). The majority of women report a significant decrease in QoL from pre-menopause to entering the menopausal transition, generally attributed to the experience of adverse menopausal symptoms (Hutchings et al., 2023; Kavga et al., 2024; Taebi et al., 2018). More specifically Hutchings et al., (2023) found the most significant impact on QoL to be related to the aspects of pain, emotional wellbeing, social functioning, and energy and fatigue from pre-menopause to beginning the menopausal transition through to postmenopause.

2.3.3 Vasomotor Symptoms

VMS in the context of menopause includes the symptoms of hot flushes and night sweats (Deecher & Dorries, 2007; Thurston & Joffe, 2011). While not fully understood, it is proposed that VMS occur as a result of a reduced capacity of the body's thermoregulatory nucleus to maintain homeostasis of core temperature within acceptable ranges (Deecher & Dorries, 2007; Thurston, 2018). Women who experience VMS are also more likely to have a smaller homeostasis threshold (Morrow et al., 2011; Thurston, 2018), and consequently have a lower tolerance for temperature changes. Women who experience VMS exceed their set body temperature more frequently as a result of this reduced capacity, experiencing a flush of intense heat in their upper chest and face, and/or night sweats to dissipate this excess heat from the body (Deecher & Dorries, 2007; Morrow et al., 2011; Thurston, 2018). Oestrogens are implicated in modulating neuronal circuits including the maintenance of core body temperature (Zhang et al., 2021), and so fluctuating oestradiol during the perimenopause is posited to be the main driver of VMS (Deecher & Dorries, 2007; Zhang et al., 2021).

VMS are the most prevalent menopausal symptoms; 60-80% of women will report hot flushes or night sweats throughout the latter phases of reproductive ageing (Nappi et al., 2023; Thurston, 2018; Thurston et al., 2025). Specifically, VMS are reported most frequently in the late menopausal transition and early postmenopause (Gold et al., 2006; Thurston et al., 2025), and often cited as a woman's priority concern over other menopausal symptoms (Carpenter et al., 2015; Nappi et al., 2023). Indeed, VMS have far reaching implications beyond the direct experience of excess heat, being linked to increased experience of depressed mood and sleep disturbances and impacting QoL (DePree et al., 2023; Thurston & Joffe, 2011; Thurston et al., 2025). Despite this prevalence, the experience of VMS is heterogeneous; VMS differs greatly in frequency, severity, and length of time symptoms are experienced between women (Avis et al., 2015; Tepper et al., 2016; Yu et al., 2022). The Study of Women's Health Across the Nation (SWAN) longitudinal cohort study identified a median total VMS duration of 7.4 years; however over half of women in this cohort experienced VMS for over 7 years (Avis et al., 2015). This variation can be attributed to four distinct patterns of VMS relative to the FMP discerned from secondary analysis of the same SWAN study: low probability of experiencing VMS, high probability of experiencing VMS, early onset VMS, and late onset VMS (Tepper et al., 2016). Each pattern was correlated to

certain ethnicities, psychosocial factors, lifestyle factors, and pre-menopause BMI (Avis et al., 2015; Gold et al., 2006; Tepper et al., 2016), indicating VMS is determined by factors beyond fluctuating reproductive hormones (Ryu et al., 2020; Tepper et al., 2016). Thus, it becomes clear why, despite the literature indicating a predicted incidence of VMS in the late menopausal transition and early postmenopause, VMS can onset up to 11 years prior to the FMP, and continue well into postmenopause (Avis et al., 2015; Thurston, 2018). VMS frequency varies greatly; women can experience up to 20 hot flushes per day (Avis et al., 2018; Khan et al., 2023). The severity of VMS is represented on a self-reported spectrum including mild, moderate, and severe (DePree et al., 2023; Thurston et al., 2025; Yuksel et al., 2025). One third of women will experience moderate to severe VMS (Avis et al., 2018; E. W. Freeman et al., 2014; Thurston et al., 2025), with a subset of women continuing to experience troubling VMS well into postmenopause (Avis et al., 2018; Avis et al., 2015; Khan et al., 2023). A key challenge of quantifying VMS along the former spectrum is that these ratings are self-reported, allowing for confounding factors to influence ratings (Thurston & Joffe, 2011). To illustrate this point, women who have a greater negative affect rate their VMS severity higher than women with a lower negative affect (Thurston & Joffe, 2011), and women who have a lower threshold for physiological discomfort will report VMS at a higher severity than those with a higher threshold (Thurston & Joffe, 2011). Overall, VMS occur throughout the menopausal transition and postmenopause, and negatively impact menopausal QoL; reproductive hormone fluctuations alone cannot definitively predict onset, frequency, and severity of VMS.

2.3.4 Mood Changes

Depressive mood and anxiety are experienced by women entering the menopausal transition (Bromberger & Kravitz, 2011). The menopausal transition is considered an 'at risk' period for developing depressed mood, exemplified by the increased incidence of depressive symptoms and new onset depression amongst women, even those with no prior history of affected mood (Albert & Newhouse, 2019; Badawy et al., 2024; Vivian-Taylor & Hickey, 2014). Longitudinal cohort studies have demonstrated a possible correlation between the menopausal transition and increased experience of anxiety, however this is not consistently demonstrated in the literature (Alblooshi et al., 2023; Bremer et al., 2019; Brown et al., 2024). Neuroendocrine changes during this reproductive phase are implicated in the

development of these mood changes; reproductive hormone fluctuations, including oestradiol, drive these (Alblooshi et al., 2023; Deshpande & Rao, 2025; Fidecicchi et al., 2024). Specifically, oestradiol fluctuations during perimenopause interrupt neurotransmitters responsible for mood regulation, leading to unstable moods and therefore mood changes (Deshpande & Rao, 2025; Fidecicchi et al., 2024).

The prevalence of depressive symptoms in women traversing through menopause ranges from 15 to 50% (Vaziri-harami et al., 2024). Jia et al. (2024) found a global prevalence of depression across both the menopausal transition and postmenopause of 35.6%, and Li et al., (2024) found the prevalence of depression in postmenopause was 28%. Considering cross-sectional and cohort studies, the SWAN cohort had a 23% prevalence of clinical depression at baseline (Bromberger & Kravitz, 2011), another cohort had a prevalence of 33.5% (Vaziri-harami et al., 2024). Few studies have reported the prevalence of anxiety during this time of life, however one study found a prevalence of 54.2% (Vaziri-harami et al., 2024). The true prevalence of mood changes upon entering the menopausal transition cannot be accurately determined as the measures and reporting of symptoms are not standardised across different studies, with some smaller studies reporting no significant difference in depression between premenopausal and the menopausal transition or postmenopause (Bromberger & Kravitz, 2011; Jia et al., 2024; Li et al., 2024; Vaziri-harami et al., 2024). The likelihood of experiencing mood changes during this time is also dependent on personal circumstances (Bromberger & Kravitz, 2011; Ellen W. Freeman et al., 2014). In fact, common predictors of depressive symptoms in the literature include: a past history of depression/depressive symptoms; intensity of VMS; education levels; BMI; and adverse life events (Avis et al., 2024; Bromberger & Kravitz, 2011; Vivian-Taylor & Hickey, 2014). Of particular interest, women who experience more severe VMS are more likely to report high depressive symptoms, and vice versa (Thurston & Joffe, 2011; Vivian-Taylor & Hickey, 2014). Therefore, while mood changes throughout the stages of menopause are frequently reported, the true prevalence, severity, and reasons for occurrence require further investigation to help inform more comprehensive understanding of their incidence.

2.3.5 Sleep Disturbances

Sleep disturbances encompass the insomnia symptoms of falling asleep, staying asleep, and early awakening (Ciano et al., 2017; Kravitz et al., 2008). Women traversing menopause often experience night-time awakenings, poor-quality and/or insufficient sleep, and waking up early without being able to fall back to sleep (Maki et al., 2024; Tandon et al., 2022).

Hormone fluctuations are implicated in these sleep disturbances as oestrogen has influence over neurotransmitters which regulate sleep (Tandon et al., 2022; Troia et al., 2025). Lower levels of oestradiol are associated with difficulties falling asleep and poor sleep quality, and higher oestrogen levels are protective for sleep problems (Haufe et al., 2022). Other studies have implicated elevated FSH as another potential driver of sleep disturbances (Kravitz et al., 2008). It is difficult to fully understand the pathophysiology of sleep disturbances in menopause as sleep disorders in women are also increased secondary to the physiological process of ageing including changes in circadian rhythm and comorbidities associated with ageing including sleep apnoea (Edwards et al., 2010; Jones et al., 2018; Kravitz et al., 2008; Tandon et al., 2022; Troia et al., 2025). Furthermore, life stressors are often correlated to increased incidence of sleep disturbances (Minarik, 2009). While sleep disturbances are most commonly attributed to the fluctuating hormonal milieu women experience as they enter the menopausal transition, it does not wholly account for sleep disturbances in this population.

Sleep disturbances are common and often rated as significant for women during midlife (Maki et al., 2024; Salari et al., 2023). The prevalence of self-reported sleep disturbances range from 30 to 69% in the literature (Ciano et al., 2017; Freeman et al., 2015; Jones et al., 2018; Maki et al., 2024) with women in late perimenopause significantly more likely to experience insomnia symptoms than in early perimenopause (Ciano et al., 2017; Tandon et al., 2022). In fact, postmenopause is shown in some studies to have a higher prevalence of insomnia symptoms than perimenopause (Tandon et al., 2022). The severity of sleep disturbance experienced is impacted by a myriad of biopsychosocial factors; these include severity of VMS, baseline depressive symptoms, and anxiety (Chenji et al., 2024; Williams et al., 2009). In fact, women who experience significant VMS are more likely to report a higher frequency and severity of sleep disturbances (Chenji et al., 2024; Williams et al., 2009). It becomes clear that sleep disturbances, while likely driven by hormonal fluctuations

throughout the menopausal transition, are also driven by other factors and should be considered when addressing sleep disturbances in women during this phase of life.

2.4 Social Landscape for Women with Menopause

Women who are navigating menopause and its associated symptoms can experience shame around menopause, impacting their access to treatment. Qualitative studies investigating the lived experience of menopausal women find that menopause is a taboo topic and feel a societal stigma attached to this phase of life (Adelekan-Kamara et al., 2023; Muralikrishna et al., 2025; Thomas et al., 2025). In fact, women report feeling less likely to speak openly about their experience (AlSwayied et al., 2024), with some women deciding to not seek support due to this taboo (Adelekan-Kamara et al., 2023). Multiple factors are attributed to this taboo across the literature: a lack of knowledge of menopause (Adelekan-Kamara et al., 2023), cultural factors (Muralikrishna et al., 2025), and the impact of older generations (Muralikrishna et al., 2025; Thomas et al., 2025). It becomes clear that women traversing menopause face barriers to speak about their experiences, decreasing their ability to seek support due to the impact of societal stigma. Despite the extensive impacts of menopause-specific symptoms discussed above, women are not encouraged to speak openly about their experience. More research should be done into how this taboo can be disestablished, opening up more avenues for women to feel safe to speak of their common experience.

2.5 Pharmacological Treatments for Menopausal Symptoms

2.5.1 Introduction to Pharmacological Treatments for Menopause

The deleterious impact of menopausal symptoms on self-reported quality of life drives women towards treatment. Currently, the Clinical Practice Guidelines recommend menopausal hormone therapy (MHT) as the most effective treatment option, particularly for VMS (Davis et al., 2023). Selective serotonin reuptake inhibitors (SSRIs) are a non-hormonal treatment option well established in the literature to have efficacy to treat menopausal symptoms, however with more side-effects and less efficacy than MHT (Davis et al., 2023). Indeed, SSRIs are not recommended as a first-line treatment, particularly if women have no contraindications to MHT, given the efficacy of MHT in alleviating menopausal symptoms (Panay et al., 2024). Despite this recommendation for pharmacological treatment, MHT prescription requires a careful assessment of a woman's health due to potential long-term

health consequences if MHT is prescribed inappropriately (Davis et al., 2023; DePree et al., 2024; Panay et al., 2024). Presently, MHT and SSRIs are the most common pharmacological treatments for menopause.

2.5.2 MHT: Mechanism of Action, Efficacy, Concerns

Oestrogen therapy is the predominant form of MHT, often prescribed with a progestogen depending on whether a woman still has her uterus (Davis et al., 2023; Davis et al., 2023). The route of MHT is either oral, or as a transdermal patch, gel, or spray; each preparation differs in dose and rate of release depending on individual circumstances (Davis et al., 2023; Davis et al., 2023). This form of treatment aims to replace the hormones which have declined throughout reproductive ageing, helping to offset the symptoms related to these declining reproductive hormones (Davis et al., 2023; Davis et al., 2023). Beginning MHT requires women to carefully monitor dosage and symptoms with their health care practitioner (HCP) to ensure adequate symptom alleviation and minimise adverse side effects (Panay et al., 2024).

The benefits of MHT on symptom alleviation in menopausal women has consistently been demonstrated (Mukherjee & Davis, 2025; Ruan & Mueck, 2022). Intervention with MHT can prevent or reduce experience of the climacteric symptoms if initiated early, including VMS, sleep disturbances, and mood changes (Hemachandra et al., 2024; Mukherjee & Davis, 2025; Ruan & Mueck, 2022). Beyond symptom experience, MHT can reduce the risk of cardiovascular disease (CVD) (Khadilkar, 2019), bone fractures (Gosset et al., 2021), and the development of type 2 diabetes (Shih et al., 2024) – all conditions which increase in probability once women enter the menopause transition (Panay et al., 2024). It is for this reason that it is the first-line treatment for all women seeking support for menopause-specific symptoms.

Despite its efficacy, MHT use has been associated with multiple health risks. Oral formulations of MHT are associated with an increased risk of blood clots forming in the veins, called venous thromboembolism (VTE) (Davis et al., 2023; Davis et al., 2023), and an increased risk of developing breast cancer (Davis et al., 2023; Davis et al., 2023) or progressing hormone-receptor positive breast and endometrial cancer in women (Panay et

al., 2024). Menopausal women who are high risk for developing VTE, breast cancer, or have breast cancer are contraindicated for MHT (Davis et al., 2023; Panay et al., 2024). To mitigate risk of MHT for those contraindicated, a risk:benefit assessment can be conducted to find an acceptable amount of risk for the individual, and what formulation is most appropriate to reduce risk (Panay et al., 2024; Ruan & Mueck, 2022). For example, a lower-dose transdermal oestrogen formulation has a higher safety profile for women with contraindications than an oral oestrogen formulation, allowing these women symptom relief with a lower risk (Goldštajn et al., 2023; Lee et al., 2020). Another important component of initiating MHT is to assess the timing of a woman's menopause (Madsen et al., 2023) as the risk of VTE and other cardiovascular events decreases if MHT is initiated within ten years of beginning menopause, irrespective of formulation (Madsen et al., 2023). Further robust clinical trials should be conducted to further understand the risk of breast cancer and MHT, as at present there is a lack of evidence on the MHT formulation which presents the least risk for adverse side effects (Davis et al., 2023; Panay et al., 2024).

2.5.3 SSRIs: Mechanism of Action, Efficacy, Concerns

Anti-depressants are prescribed as a second-line pharmacological intervention if MHT is contraindicated or not desired for a woman (Azizi et al., 2022). SSRIs are indicated for women with troubling VMS (Madsen et al., 2023), mood changes (Wu et al., 2020), and insomnia (Cheng et al., 2021). This medication is typically indicated for treatment of depression and anxiety; its mechanism of action being to increase the amount of serotonin, a neurotransmitter, available in the brain by blocking a serotonin transporter to allow for enhanced mood and emotional regulation (Edinoff et al., 2021; Moncrieff et al., 2023). It is for this reason that SSRIs are indicated for the menopausal symptom of mood changes, namely anxiety and depressive symptoms.

The mechanism of action for SSRIs reducing experience of VMS is not fully understood in the literature, however it is posited that the decrease in oestrogen associated with this stage of life is associated with a concurrent reduction in the production of neurotransmitters and endorphins (Kockler & McCarthy, 2004). This reduction is thought to make a woman more susceptible for VMS, namely hot flashes (Kockler & McCarthy, 2004). SSRIs ability to increase

the amount of serotonin in the brain is thought to offset the increased incidence of hot flashes experienced (Kockler & McCarthy, 2004).

Shams et al., (2013) conducted a meta-analysis to summarise the evidence on SSRIs reducing hot flash incidence in healthy women across multiple randomised controlled trials. They found SSRIs were associated with a statistically significant decrease in hot flash frequency within 4-8 weeks which is likely clinically relevant due to a lack of heterogeneity between studies (Shams et al., 2014). The authors did note, however, that the severity of hot flashes being reduced, while reported, is potentially not clinically relevant due to inconsistent reporting and different standardised rating scales for severity between study designs (Shams et al., 2014). Despite these significant reductions being rated as modest, women often report these reductions as meaningful, and want to continue with the treatment as a result (Freeman et al., 2011). A more recent meta-analysis in 2022 supported the analysis from 2013, indicating that developed countries who conduct trials on SSRI use and hot flashes find a significant reduction in incidence with pharmacological intervention, and further elucidated the specific SSRIs which have higher treatment efficacy and safety when used for the treatment of hot flashes: escitalopram, paroxetine, and fluoxetine (Azizi et al., 2022).

While SSRIs demonstrate treatment efficacy for menopausal symptoms across the literature, SSRI therapy is often associated with an experience of more adverse effects compared to placebo which leads to discontinuation of medication and dropout from trials (Shams et al., 2014), where discontinuation of SSRIs suddenly is associated with adverse symptoms (Azizi et al., 2022). It is important to keep in mind that as individual studies can report a high rate of dropouts, the results of efficacy need to be taken with this in consideration as a higher proportion of the treatment group will experience positive results. Further, while SSRIs are implicated as improving menopausal symptoms, not all trials are robust in their quality due to a lack of blinding, small cohorts, and inconsistent reports of significant results (Freeman et al., 2011; Wu et al., 2020). Further, the use of different types of SSRIs makes it hard to compare results between cohorts (Wu et al., 2020). It is clear that SSRIs have value as a treatment for troubling symptoms of the menopause transition and postmenopause, however further trials need to be conducted with more rigorous measures to support this treatment including dosage, length of treatment, and type of medication used.

2.5.4 Pharmacological Treatment Utilisation and Satisfaction

Treatment of menopausal symptoms with the pharmacological treatments discussed above have mixed reports of utilisation and satisfaction (DePree et al., 2024).

A high proportion of women are hesitant to engage in MHT despite having no contraindications to the medication (Stute et al., 2022). Stute et al., (2022) found that of women prescribed MHT for VMS, one in three reported dissatisfaction with the ability of the medication to control VMS, and women with more severe symptoms were more likely to report dissatisfaction than women with mild symptoms. This finding is supported by DePree et al., (2024) who found 41% of women reported a lack of effectiveness of medication to manage their VMS. A high proportion of women suffering with menopause-specific symptoms look to lifestyle changes to manage their symptoms; exercise being the most common change reported, followed by a balanced diet, then incorporating more rest and relaxation (Kingsberg et al., 2024). In fact, the majority of women and physicians are open to a non-hormonal treatment option to support VMS (DePree et al., 2024).

2.6 Non-Pharmacological Treatments for Menopausal Symptoms

2.6.1 Physical Activity Interventions

Physical activity (PA) is a well-documented lifestyle factor which, when engaged in, is associated with a reduction of incidence of non-communicable disease and improvement in health-related quality of life (Warburton et al., 2006); it is for this purpose that PA is recommended for all individuals to engage in to improve health outcomes. Women traversing through the menopausal transition and into postmenopause are no different, with current evidence recommending regular engagement in PA to support physical health, sleep, and improved well-being (Choudhary & Bansal, 2025; Dąbrowska-Galas et al., 2019; Grindler & Santoro, 2015). Indeed, women who engage in more regular PA report less severe climacteric symptoms (Kim et al., 2014; Skrzypulec et al., 2010), suggesting PA is protective against the experience of the negative symptoms of menopause. Across the literature multiple physical activity interventions have been implemented to understand the direct impact of PA on perimenopausal and postmenopausal women; this section will consider specific trials addressing the following climacteric symptoms of menopause: VMS and sleep.

2.6.1.1 Physical Activity Interventions for VMS

The role of PA reducing incidence and severity of VMS is not consistent in the literature. Of the six trials included in this section, demonstrated in Table 4, only three found a statistically significant improvement in this metric compared to the control (Avis et al., 2014; Berin et al., 2022; Luoto et al., 2012); with the interventions showing efficacy being yoga (Avis et al., 2014), aerobic exercise training (Luoto et al., 2012), and resistance training (Berin et al., 2022). Improvements in VMS across three different types of exercise is promising, as it indicates that engaging in PA in various forms is beneficial for improving problematic VMS in perimenopausal and postmenopausal women. Other studies investigating the impact of yoga and aerobic exercise have found no significant differences in VMS between intervention and control, even when controlling for adherence with intervention in the analysis (Daley et al., 2015; Newton et al., 2014; Sternfeld et al., 2014). It is likely heterogeneity in study design, intervention delivery, and populations included in these studies provide these inconsistent results. As well as PA interventions in the literature providing inconsistent results, there is an inconsistency in length of time and delivery of interventions; with delivery ranging from 10 weeks (Avis et al., 2014) to 6 months (Luoto et al., 2012), and some interventions were purely unsupervised (Luoto et al., 2012) compared to others with more intensive involvement from staff (Newton et al., 2014; Sternfeld et al., 2014). Lastly, the control for these interventions is usual activity, where participants are asked to maintain their current level of activity prior to intervention. Participants were screened before entering interventions to have a sedentary lifestyle, however it is important to bear in mind that despite being classified as sedentary when beginning the intervention, their activity may have increased, or there may be differences in participant activity levels i.e. some participants at baseline were more active than others, potentially influencing the wellbeing of the control group and reducing the findings between intervention and control. For example, one study required participants to exercise less than 3 days a week, for 30 minutes at a time (Newton et al., 2014). This can introduce inconsistency in the level of physical activity between participants. To the best of our knowledge, this inconsistency in baseline physical activity levels was not controlled for in analysis of these studies. In future, these studies should be repeated with larger cohorts and same scales of measurement to demonstrate the same results again to confirm findings in this small subset of trials.

Table 4.*Physical activity interventions in menopausal women and their impact on vasomotor symptoms*

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Avis et al., 2014	RCT, non-blinded	To obtain preliminary data on the efficacy of yoga for reducing self-reported menopausal hot flashes in a randomised study including an attention control group	USA	Perimenopausal women & postmenopausal women with ≥ 4 hot flashes/day for 4 weeks.	54	10 week intervention Yoga: 90 minute class once a week + homework Health and Wellness education: 90 minute class once a week on multiple topics, including menopause Control: nothing	Hot flash frequency decreased for all 3 groups. Strongest decline in 1 st week. Yoga and health and wellness groups declined the most and followed similar patterns. Women decreased hot flash frequency by 2/3 in yoga and HW, 1/3 in control. $p > 0.05$
Newton et al., 2014	RCT, non-blinded	To determine the efficacy of yoga in alleviating VMS frequency and bother MsFLASH	USA	Peri/post-menopausal VMS rated highly No use of medication for VMS, not doing the proposed interventions currently	237	12 weeks Yoga: 90 minute classes and home practice Usual activity: no changes	No difference in VMS bother or frequency with yoga versus usual activity $p = 0.119$
Sternfeld et al., 2014	RCT, non-blinded	To determine efficacy of exercise training for alleviating vasomotor and other menopausal symptoms MsFLASH	USA	Peri/post-menopausal VMS rated highly No use of medication for VMS, not doing the proposed interventions currently	248	12 weeks Usual activity: no changes Exercise training: 3 individualised CV conditioning training sessions per week either treadmill, elliptical, or bike	Changes in VMS frequency and bother were not significant in control group even after controlling for only women who were adherent $p > 0.05$
Luoto et al., 2012	RCT, non-blinded	To estimate whether aerobic training has an effect on frequency of hot flashes or quality of life	Finland	Symptomatic, sedentary women with no current HT use	176	Unsupervised aerobic training 50 minutes, 4x a week, for 6 months, to a certain RPE/HR Control	Decrease in only night-time flashes significant ($p = 0.012$), all others not significant.

							No significant changes in bodyweight reported.
Berin et al., 2021	RCT, non-blinded	To investigate the effect of a resistance training intervention on HRQoL in postmenopausal women with VMS	Sweden	>45 year old women with daily VMS	65	15 weeks Intervention: resistance training 3x week Control: nothing	Resistance training significant improvement in VMS on WHQ scale ($p = 0.002$). No change in bodyweight.
Daley et al., 2014	RCT, non-blinded	To investigate the effectiveness of exercise as treatment for vasomotor menopausal symptoms	UK	Perimenopausal and postmenopausal women experiencing at least 5 HF/night sweats per day and no MHT for past 3 months	261	Control: no change Exercise 1: face to face sessions + DVD and material on menopause Exercise 2: face to face sessions + attendance of social support groups for exercise	No significant changes found ($p > 0.05$)
Abbreviations: HF – hot flushes HRQoL – Health Related Quality of Life HT – hormone therapy MHT – menopausal hormone therapy RCT – randomised control trial VMS – vasomotor symptoms WHQ – Women’s Health Questionnaire							

2.6.1.2 Physical Activity Interventions for Sleep

The relationship between PA and sleep is inconclusive from the evidence base concerning menopausal women; the trials included can be found in Table 5. Three trials investigated the impact of a yoga intervention on either self-perceived sleep quality (Elavsky & McAuley, 2007), sleep parameters measured via actigraphs (Buchanan Diana et al.), or insomnia severity (Afonso et al., 2012). Only one trial found a significant difference between the intervention and control, finding women experiencing a decrease in climacteric symptoms and a decrease in insomnia severity (Afonso et al., 2012). The first trial was over 12 weeks (Buchanan Diana et al.; Elavsky & McAuley, 2007), whereas the latter two were over four months, with control groups continuing their normal activity. All trials required women to not be currently taking medication for menopause-related symptoms, and required women to have a low baseline of physical activity to begin with. Interestingly, only one of these trials required women to have a diagnosis of insomnia before participating (Afonso et al., 2012), and it was this trial which yielded the significant results. This suggests that a structured PA intervention, specifically yoga-based, is most beneficial in women with clinical sleep disorders compared to women with no sleep disturbances at baseline.

Two trials predominantly investigated the impact of PA on VMS, as discussed in the section above, but elucidated secondary outcomes of improved sleep (Berin et al., 2022; Mansikkamäki et al., 2012). Mansikkamäki et al., (2012) delivered aerobic training four times a week for six months and found an improved sleep quality in women who adhered to the intervention compared to control, where Berin et al., (2021) considered a 15 week intervention with three strength training sessions a week and found a significant improvement in rating of sleep problems. As these studies did not specifically require women to have insomnia or sleep disturbances to participate, it is promising that these interventions were successful at improving sleep quality in women who did not necessarily meet a clinical diagnosis of insomnia. It is important to note that VMS and sleep disturbances are linked in the literature, with more bothersome VMS reducing sleep quality (Chenji et al., 2024; Williams et al., 2009). Therefore, these two specific trials which found significant improvements in sleep had the focus of reducing VMS, and found improved sleep quality as a result. So, we cannot definitively say that PA was the factor that specifically improves sleep quality or whether PA improves reduces experience of VMS which then improves sleep quality. Structured trials requiring a perimenopausal and postmenopausal population who have an insomnia diagnosis and engage in PA interventions should be conducted to understand whether sleep quality can be improved with PA independently of VMS, to know how to apply these interventions to support women with sleep disturbances.

Table 5.

Physical activity interventions in menopausal women and their impact on sleep-related metrics

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Buchanan et al., 2017	RCT, non-blinded	To determine effects of yoga and aerobic exercise compared with usual activity on objective assessments of sleep in midlife women	USA	Perimenopausal and postmenopausal women with hot flashes Sleep disturbances were not a requirement	186	12 week intervention Yoga: 90 minute class once a week Supervised aerobic exercise: 40-60 minute sessions once a week to meet EE goal Usual activity: no change Sleep measured using actigraph sleep outcomes: total sleep time, mean wake after sleep onset, number of long awakenings	No changes in sleep parameters in women in peri or post menopause.
Elavsky & McAuley, 2007	RCT, non-blinded	To examine structured exercise in the form of walking or yoga to determine the effects on perceived sleep quality	USA	Middle-aged women, low-activity Perimenopausal	164	4 month intervention Moderate intensity Walking Low intensity Yoga Usual activity Sleep measured using Pittsburgh Sleep Quality Index (PSQI)	No statistically significant improvement in self-perceived sleep ($p > 0.05$). Only menopausal symptoms impacted sleep quality
Afonso et al., 2012	RCT, non-blinded	To evaluate the effect of yoga practice on the physical and mental health and climacteric symptoms of postmenopausal women with a diagnosis of insomnia	Brazil	Postmenopausal women not on HT and do have an insomnia diagnosis	44	4 month intervention Control Passive stretching Yoga of a specific sequence Sleep measured using Insomnia Severity Index (ISI)	Yoga group significant decrease in climacteric symptoms and insomnia severity ($p < 0.05$)
Mansikkamaki et al., 2012	RCT, non-blinded	To study whether exercise training improves sleep quality or decreases the amount of night time hot flushes among menopausal women with vasomotor symptoms	Finland	Symptomatic, sedentary women with no current HT use	176	Unsupervised aerobic training 50 minutes, 4x a week, for 6 months, to a certain RPE/HR Control Sleep measured using an app and rating scale of 1-5	Sleep quality improved more in the intervention group than control group ($p = 0.043$)
Berin et al., 2021	RCT, non-blinded	To investigate the effect of a resistance training	Sweden	>45 year old women with daily VMS	65	15 weeks	Resistance training had significant improvement

		intervention on HRQoL in postmenopausal women with VMS				Intervention: resistance training 3x week Control: nothing Sleep measured using Women's Health Questionnaire (WHQ)	in sleep problems ($p = 0.03$)
Abbreviations: EE – energy expenditure HRQoL – Health Related Quality of Life HT – hormone therapy ISI – Insomnia Severity Index PSQI – Pittsburgh Sleep Quality Index RCT – randomised control trial VMS – vasomotor symptoms WHQ – Women's Health Questionnaire							

The role of PA in the form of aerobic exercise, strength training, or yoga, administered at least once a week for an extended period of time, has potential to improve sleep disturbances in women with climacteric symptoms, and is promising in both cohorts with diagnosed sleep disorders and those struggling with bothersome VMS. However, the heterogeneity of study interventions and the lack of repetition of these trials means these results cannot be interpreted with confidence. Therefore, more research in this space should be conducted to confirm these significant findings and find the best way to implement PA to support women struggling with sleep disturbances.

2.6.2 Nutrition Interventions

Increasing interest has been placed on the role of nutrition in alleviating the climacteric symptoms of menopause. Indeed, experience of symptoms such as mood changes and VMS can be linked to patterns of dietary intake in peri- and postmenopausal women (Noll et al., 2021); an increased diet quality including a higher proportion of vegetables, wholegrains, and unprocessed foods is supportive for less intense symptoms (Noll et al., 2021; Noll et al., 2022; Vetrani et al., 2022). In contrast, an intake primarily of processed foods, saturated fats, and lower quality carbohydrates is associated with an increased intensity of mood change symptoms, VMS, and sleep disturbances (Mohsenian et al., 2021; Noll et al., 2021; Noll et al., 2022). It is clear that dietary patterns impact the experience of climacteric symptoms across the menopausal transition and into postmenopause, and could have therapeutic potential to address these symptoms. Particular interest has been placed on diet patterns such as the Mediterranean Diet due to its promotion of plant-based foods, healthy fats, and lean protein

sources (Vetrani et al., 2022), and of soy based foods due to their content of phytoestrogens, in particular isoflavone, which is thought to mimic oestrogen in the body and so ameliorate the negative symptomology of menopause (Levis & Griebeler, 2010; Vitale et al., 2013). However, the Practice-based Evidence in Nutrition (PEN) resource indicates soy products have a 'C' grade level of evidence for reducing menopausal symptoms, indicating there is weak evidence for this to have efficacy, and provides no mention of the efficacy of the Mediterranean Diet (Dietitians of Canada, 2025). The European Menopause and Andropause Society (EMAS) released a position statement stating that the Mediterranean Diet demonstrates efficacy in improving overall health in menopausal women, such as reducing comorbidities, but no concrete correlation has been drawn for this diet pattern mitigating the experience of menopausal symptoms (Cano et al., 2020). Omega-3 fatty acids, found in fatty fish, and some nuts and seeds, have also been implicated as protective against menopausal symptoms due to their potential role in modulating neurotransmitters and so offsetting the drop of oestrogen (Iqbal et al., 2023). Again, the PEN resource provides no supporting evidence for this, noting flaxseed (a source of omega-3 fatty acids) had no positive impact on the experience of climacteric symptoms (Dietitians of Canada, 2025), and a large systematic review found no significant improvement between omega-3 intake and climacteric symptoms (Iqbal et al., 2023).

Despite these associations between dietary patterns and incidence of symptoms, there are minimal guidelines regarding dietary recommendations for managing menopausal symptoms. The current guidelines for nutrition for menopausal women focus on the importance of good nutrition for preventing chronic disease, rather than reducing symptomology (Erdélyi et al., 2024). The following sections will consider potential dietary interventions for reducing the climacteric symptoms of menopause.

2.6.2.1 Nutrition Interventions for VMS

Multiple clinical trials have investigated the impact of various nutrition interventions on VMS (as seen in Table 6). Three trials have indicated soy isoflavones as having a significant reduction in VMS experience in women (Barnard et al., 2021; Barnard et al., 2023; Palacios et al., 2017). Women enrolled in the intervention experienced hot flashes 2.5 times less than the control group (Barnard et al., 2023), and half of the women were free from experiencing moderate-to-severe hot flashes by the end of the intervention (Barnard et al., 2021; Barnard

et al., 2023). Further, isoflavones were shown to have a higher efficacy at improving symptoms, and these symptom improvements occurred at an earlier stage in the intervention than other nutrition interventions, with improvements being seen as early as 3 weeks into the intervention (Palacios et al., 2017). It is important to note that the findings from Barnard et al., (2021) were able to be replicated in a larger cohort (N=84) following the same intervention protocol (Barnard et al., 2023), strengthening the posited efficacy of soy isoflavones.

Despite these findings, it is important to interpret them with caution due to the limitations of these studies. None of the trials were blinded, due to the nature of dietary interventions where participants are aware of the change to their diet (Barnard et al., 2021; Barnard et al., 2023; Palacios et al., 2017). Therefore, participants knew that they were receiving an intervention aimed at improving their VMS incidence and severity, and potentially reported improvements that they may not have if they were blinded to their intervention. The studies also utilised different administrations of soy isoflavones, with 2 of the 3 trials utilising 86g of cooked soybeans per day (Barnard et al., 2021; Barnard et al., 2023), and the other providing isoflavones in a capsule form (Palacios et al., 2017). These different methods of administration, while all significant at improving hot flash incidence and severity, deliver different amounts of isoflavones and as different forms (Barnard et al., 2021; Barnard et al., 2023; Palacios et al., 2017), meaning it is hard to understand the best method for delivering this intervention. Lastly, the trials which focused on including soybeans as the form of soy isoflavones also required participants to follow a plant-based, low-fat diet (Barnard et al., 2021; Barnard et al., 2023). Due to the presence of multiple dietary changes in this intervention, not just the addition of soybeans, it is hard to truly attribute the improvement in VMS, namely hot flashes, to the soy isoflavones alone, as other aspects of the dietary intervention may have been involved in this finding. While the evidence for soy isoflavones is promising, with results being replicated in one set of trials, it is important to ensure further studies build on this by standardising the method of administration of these, for example 86g/day of cooked soybeans as has shown efficacy, and control for other confounders which may be influencing these positive findings namely other dietary changes.

Three clinical trials have investigated the efficacy of omega-3 fatty acids on reducing VMS with varying results. Two trials delivering omega-3 fatty acids in capsule form, 1.8g/day and 850mg/day respectively, found a significant decrease in hot flash frequency in the intervention group (Cohen et al., 2014; Palacios et al., 2017), with particular efficacy in women who experienced severe hot flashes when compared to moderate hot flashes (Palacios et al., 2017). However, Cohen et al., (2024) found no difference in hot flash incidence or severity between participants who took omega-3 capsules versus taking a placebo capsule, after controlling for physical activity. The trials ranged from 8 – 16 weeks, and each provided different compositions and overall doses of omega-3 fatty acids, making the comparison between trials hard due to their heterogeneity (Cohen et al., 2014; Lucas et al., 2009; Palacios et al., 2017). Two of the trials were blinded (Cohen et al., 2014; Lucas et al., 2009) giving confidence that there was a limitation of potential bias and participants were not over-reporting improved symptoms. As far as this researcher is aware these are the main RCTs focussed on omega-3 supplementation on improving VMS, and the results are inconclusive. Further studies should be conducted using standardised doses and composition of omega-3 fatty acids to understand whether there is a potential therapeutic benefit of these to improve the experience of VMS for perimenopausal and postmenopausal women.

Table 6.*Nutrition interventions in menopausal women and their impact on vasomotor symptoms*

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Barnard et al., 2023	Parallel RCT, unblinded	To test the effect of a dietary intervention on VMS and menopause related QoL	USA	Postmenopausal women who were not already following a similar diet and reported moderate to high VMS	84	12 week intervention. Intervention women were asked to avoid animal-derived foods, minimise oil, and consume 86g of soybeans daily, and take a B vitamin supplement. Also participated in 1hr meeting every week to discuss strategies and adherence.	Moderate-severe hot flashes decreased 2.5x more than in control group, and 50% of women reported no moderate to severe hot flashes at all compared to control where there was no change.
Barnard et al., 2021	RCT, unblinded	To assess the effects of the combination of a low-fat plant-based diet and soybeans on the frequency and severity of menopausal hot flashes	USA	Postmenopausal women who experience VMS at a specific frequency	38	12 week intervention following a low fat plant based diet with ½ cup of soybeans daily. Also included 1hr weekly group sessions with a dietitian, physician, or research staff member on meal planning, shopping etc.	Total hot flashes decreased by 79% in intervention group, and moderate to severe flashed decreased 84% in intervention group, with 59% of participants being free from these by the end of intervention.
Palacios et al., 2017	RCT, non-blinded	To determine the efficacy and tolerability of omega-3 fatty acids versus soybean isoflavones in reducing the VMS frequency in postmenopausal women	Spain	Postmenopausal women	76	Intervention group had omega-3 capsules with 425mg n-3 twice a day Placebo had two tablets of isoflavones at 54.4mg/tablet a day 16 weeks	Omega-3 supplements reduced hot flashes after 4 months, and have higher efficacy in women with moderate hot flashes compared to soy. Isoflavones have efficacy at 3-4 weeks and 4 months in severe hot flashes, but not moderate hot flashes.
Lucas et al., 2009	RCT, double-blinded	To compare the effects of enriched ethyl-eicosapentaenoic acid (E-EPA) omega-3 fatty acid supplementation with those of	Canada	Women between 40-55 years of age who were menopausal with moderate to severe psychological distress	120	8 weeks either intervention or placebo. Intervention 500mg n-3 PUFAs/day Placebo 500mg capsule with	HF frequency and score decreased significantly in intervention compared to control. No change in

		placebo on hot flashes and quality of life among middle-aged women				sunflower oil and regular fish oil 3x daily	intensity between groups
Cohen et al., 2014	RCT, double-blinded	To determine the efficacy and tolerability of omega-3 fatty acids in reducing VMS frequency and bother in perimenopausal and postmenopausal women	USA	Peri- and postmenopausal women	355	12 week treatment with omega-3 capsules (1.8g daily with a ratio of 425mg EPA, 100mg DHA, and other 90mg). Placebo had nothing	Frequency and severity was no different between omega-3s and placebo
Abbreviations: EPA - eicosapentaenoic acid E-EPA - ethyl-eicosapentaenoic acid HF – hot flush n-3 – omega 3 PUFA – polyunsaturated fatty acid QoL – quality of life RCT – randomised control trial VMS – vasomotor symptoms							

2.6.2.2 Nutrition Interventions for Mood Changes

The link between nutrition and mood, namely depression and anxiety, is becoming well documented in the literature outside of the context of menopause (Doenyas et al., 2025; Jacka et al., 2017; Tan, 2023). Indeed, dietary quality improvement often demonstrates a reduction in depressive and anxiety symptoms from baseline for those who participate in the intervention (Jacka et al., 2017; Opie et al., 2015). Due to this proposed association, nutrition interventions (seen in Table 7) are increasingly being posited as ways in which to manage mood changes during peri- and postmenopause (Grigolon et al., 2023) either utilising a whole-food approach (Fouad et al., 2021; Özcan et al., 2019; Torres & Nowson, 2012), or nutraceutical/single nutrient approaches (Asama et al., 2018; de Sousa-Muñoz & Filizola, 2009; Evans et al., 2017; Lucas et al., 2009).

Three trials considered the impact of a whole-food intervention on mood (Fouad et al., 2021; Özcan et al., 2019; Torres & Nowson, 2012), with one considering a whole diet approach (Torres & Nowson, 2012), and found significant improvements in depression and anxiety scores in the intervention groups. It is important to note that these studies each tested vastly different whole-foods; one focussing on a flaxseed and soy cookie versus a blend of nuts and seeds (Fouad et al., 2021), another investigating the impact of kefir (Özcan et al., 2019), and the last comparing the impact of a low fat, high fibre diet with a red meat vitality diet (Torres & Nowson, 2012). It is clear that we cannot confidently interpret these results due to the

heterogeneity between study design, and the lack of replication of these studies in the literature as far as this researcher is aware. Further, as discussed above, nutrition interventions have an inherent challenge in that they are typically not able to be blinded, especially when active diet changes are required. The present studies likely represent a high risk of bias, and again should be interpreted with caution. Larger scale studies replicating the same intervention should be conducted to confirm significance of results, and further clarify the potential impact of these diet interventions on improving depressive and anxiety symptoms in postmenopausal women.

Nutraceutical/single nutrient trials conducted in the literature include double-blinded RCTs investigating phytoestrogens (Evans et al., 2017), omega-3 fatty acids (Lucas et al., 2009), soy isoflavones (de Sousa-Muñoz & Filizola, 2009), and royal jelly (Asama et al., 2018). Asama et al., (2018) discovered that royal jelly significantly reduced anxiety symptoms after 12 weeks, and Lucas et al., (2009) found omega-3 fatty acids significantly improved depressive symptoms in women who did not already have major depression. Studies investigating soy isoflavones and phytoestrogens did not elucidate a significant improvement in depressive or anxiety symptoms (de Sousa-Muñoz & Filizola, 2009; Evans et al., 2017). As these trials were double-blinded, there is a reduced level of bias in the reported results, allowing for more confidence with interpretation. To strengthen the body of evidence these studies should be replicated in larger study populations to begin to definitively understand the effect, or non-effect, of specific nutrients on mood changes in postmenopausal women.

The current evidence is unclear on whether nutrition interventions to address the mood changes of menopause have any efficacy, due to the lack of homogeneity between studies and observed risk of bias among studies conducted (Fouad et al., 2021; Grigolon et al., 2023; Özcan et al., 2019; Torres & Nowson, 2012). Further, the majority of trials addressing mood changes in menopause utilise nutraceuticals (functional foods) or specific food supplements as their intervention (Asama et al., 2018; de Sousa-Muñoz & Filizola, 2009; Evans et al., 2017; Lucas et al., 2009), rather than a whole-diet approach demonstrated to have efficacy in the general population (Jacka et al., 2017; Opie et al., 2015). More robust trials focussing on diet interventions which have been proven to have efficacy should be conducted in this population to support the evidence base and utilise current knowledge of whole-diet

approach for mental wellbeing rather than focusing on single aspect nutrients to quantify an improvement in depressive and anxiety symptoms throughout the menopausal transition and into postmenopause.

Table 7.*Nutrition interventions in menopausal women and their impact on mood-related symptoms*

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Fouad et al., 2021	RCT, non-blinded	To study the effect of using two dietary supplements to beat depression and anxiety associated with menopause	Egypt	Postmenopausal women with no history of depression or life factors conducive for causing depression	66	Women randomised to eat either daily cookies made from soya flour and flaxseed (100g) or a daily blend of raw unroasted peanut and raw sesame (90g) for 8 weeks. MRS, anxiety score, and depression score used.	Women consuming the blend had a significant reduction in Beck anxiety and depression score than the cookies group. Indicates the enriched unsaturated fatty acids more protective of mood than natural oestrogen rich products.
Torres & Nowson., 2012	Parallel RCT, non-blinded	To compare the effect on mood of a moderate sodium DASH-type diet, including a red meat vitality diet (VD) with a healthy diet (HD) (decreased fat and increased wholegrain breads and cereals)	Australia	Peri- and postmenopausal women not on HRT, with certain BMI and BP parameters	111	Followed either the HD or VD diet for 14 weeks. Mood measured using the POMS scale.	Both groups demonstrated improved Profile of Mood States (POMS) score over the time of intervention. VD group associated with decrease in depression which was significant, red meat intake.
Evans et al., 2017	Parallel, RCT double-blind	To test whether chronic supplementation with resveratrol (a phytoestrogen) could improve cerebrovascular function, cognition, and mood in postmenopausal women.	Australia	Postmenopausal women who weren't taking specific medications, no depression diagnosis, and willing to maintain their lifestyle.	80	Took trans-resveratrol or placebo for 14 weeks. Measured mood among other factors	No significant improvements in mood with resveratrol.
Ozcan et al., 2019	RCT, non-blinded	To determine the effects of kefir on life qualities and sleep disturbances of menopausal women.	Turkey	Menopausal women with a natural menopause, sleep disturbances for over 1 year, and no diagnosed psychiatric disease, and no HRT or other medications	68	Beck Depressive Inventory (BDI) for depressive symptoms was used. 30 days Control was no changes Intervention was 500ml kefir per day, half in morning and half at night	No significant difference in depression scores between kefir and control at the end of intervention. Significant change between BDI before and

							after kefir in kefir group.
Lucas et al., 2009	RCT, double-blind	To compare E-EPA supplementation with placebo for the treatment of PD and depressive symptoms in middle-aged women	Canada	Postmenopausal women with moderate-to-severe psychological distress. No supplements, medications, or prior psychiatric diagnosis	120	8 weeks either intervention or placebo. Intervention 500mg n-3 PUFAs/day Placebo 500mg capsule with sunflower oil and regular fish oil 3x daily	Women who had PD without MDE at baseline had a significant improvement in depressive scales with E-EPA than placebo
Lopes de Sousa-Munoz & Filizola, 2009	RCT, double-blinded	To evaluate the efficacy of soy isoflavones extract (SIE) in the treatment of depressive symptoms in women with climacteric syndrome.	Brazil	Climacteric outpatients	84	16 week intervention Intervention received daily dose of 120mg SIE, and control received placebo.	No significant reduction in depressive symptoms identified across the study timepoints
Asama et al., 2018	RCT, double-blinded	To determine the effect of royal jelly on menopausal symptoms, specifically in postmenopausal women.	Japan	Postmenopausal women, diagnosed with symptoms which don't require treatment No drug treatment allowed	42	12 week protocol Intervention had RJ once per day Placebo had dextrin once per day	Significant improvement in anxiety in intervention group at 12 weeks.
Abbreviations: BDI – Beck Depression Inventory E-EPA - ethyl-eicosapentaenoic acid HD – healthy diet HRT – hormone replacement therapy POMS – Profile of Mood States PUFA – polyunsaturated fatty acid QoL – quality of life RCT – randomised control trial RJ – royal jelly VD – vitality diet							

2.6.3 Cognitive Behavioral Therapy Interventions

Cognitive behavioural therapy (CBT) is a psychotherapy in which individuals are supported to assess and modify their current automatic thought patterns, and implement behaviour change to combat these and support wellbeing (Hunter, 2021; Maki et al., 2018).

Engagement in this therapy in the general population reduces depressive symptoms and can be preventative for relapse into depression (Maki et al., 2018). It has efficacy in peri- and postmenopausal women for not only improving depressive and anxiety symptoms, but VMS and sleep disturbances (Hunter, 2021; Maki et al., 2018; Ye et al., 2022). This section will consider the implementation of CBT across different randomised trials to address each of the climacteric symptoms.

2.6.3.1 CBT for Sleep Disturbances

Cognitive behavioural therapy for insomnia (CBT-I) is a non-pharmacological approach to address insomnia (Walker et al., 2022). Delivered over 6 to 8 sessions, the therapy aims to address factors which perpetuate the experience of insomnia and manage sleep disturbances such as inability to fall asleep and stay asleep (Walker et al., 2022). It includes two key components: Sleep Restriction Therapy (SRT) and Stimulus Control Therapy (SCT), and incorporates Sleep Hygiene (SH) and Cognitive Therapy (CT) to deliver a well rounded intervention for insomnia (Walker et al., 2022). Each component addresses specific aspects of sleep, including the readiness to fall to asleep and modify behaviour to manage waking in the night (Walker et al., 2022). The combination of these allows patients to make realistic goals related to their sleep, and provides information and strategies to support better sleep (Walker et al., 2022).

CBT-I is indicated to improve the experience of insomnia in peri- and postmenopausal women (Ntikoudi et al., 2024). Multiple RCTs have demonstrated the efficacy of CBT-I compared to pharmacological, nutrition and exercise interventions (Table 8) (Guthrie et al., 2018; Kalmbach et al., 2019; McCurry et al., 2016; Ntikoudi et al., 2024). In fact, all of these RCTs report significant improvements with CBT-I compared to other interventions, with one trial finding twice the improvement in insomnia scores in the CBT-I group compared to the control condition (McCurry et al., 2016). The Pittsburgh Sleep Quality Index (PSQI) and Insomnia Severity Index (ISI) are the recommended standard research protocol questionnaires for insomnia research (Chen et al., 2017); as the majority of trials utilised the ISI (Guthrie et al., 2018; Kalmbach et al., 2019; McCurry et al., 2016; Moradi Farsani et al., 2021) and/or PSQI (Green et al., 2019; Guthrie et al., 2018; McCurry et al., 2016; Moradi Farsani et al., 2021), the results can be compared with relative confidence. The trials considered here had cohorts of differing ethnicities: three trials were based in the United States of America and included Caucasian or African-American women (Guthrie et al., 2018; Kalmbach et al., 2019; McCurry et al., 2016), and the remaining trials were conducted in Saudi Arabia (Abdelaziz et al., 2021), Iran (Moradi Farsani et al., 2021), and Canada (Green et al., 2019). As all trials demonstrated a positive improvement with engagement in CBT-I, it suggests that this method of approaching sleep disturbances may have positive impacts

irrespective of ethnicity. However, these trials aren't without limitations. The level of blinding across the trials is not consistent, with only three trials blinding participants to the intervention they were receiving (Green et al., 2019; Kalmbach et al., 2019; Moradi Farsani et al., 2021). The impact of this is that the other trials which did not utilise blinding may have an inherent bias, as participants knew their intervention was the active intervention to improve sleep, and therefore potentially influenced their self-perception of symptoms and improvement. Another limitation when comparing between trials is the different application and length of interventions. The CBT-I interventions ranged from 6 to 12 weeks, and were applied online (Moradi Farsani et al., 2021), via telephone (Guthrie et al., 2018; McCurry et al., 2016), as one on one sessions (Kalmbach et al., 2019), and through group sessions (Green et al., 2019). Therefore, while all had significant improvements in sleep, no two trials had the same intervention format and length of time, making it hard to compare results between these. The current research posits CBT-I as a promising non-pharmacological option to support peri- and postmenopausal women struggling with disturbed sleep, however further studies with more rigorous blinding, standardised application of the interventions, and more diverse cohorts should be conducted to further corroborate these findings and strengthen the evidence base.

Table 8.*Cognitive behavioural therapy interventions in menopausal women and their impact on sleep-related metrics*

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Guthrie et al. (2018)	RCT, unsure if blinded	To conduct a pooled analysis to find the effectiveness of interventions on severe insomnia symptoms and VMS across the 4 MsFLASH RCTs	USA	Peri- and postmenopausal women	546	MsFLASH Trials 1-4 1) Escitalopram versus placebo 2) Aerobic exercise & yoga versus usual exercise + omega-3 supplementation versus placebo 3) Low dose oral oestradiol and venlafaxine versus placebo 4) Telephone CBT-I versus menopause education control	CBT-I had greatest reduction in Insomnia Severity Index (ISI) and PSQI from baseline across all interventions relative to control.
McCurry et al. (2016)	RCT, unsure if blinded	To evaluate efficacy of telephone-based CBT-I versus menopause education control (MEC)	USA	Peri- and postmenopausal women	106	Six CBT-I or MEC telephone sessions over 8 weeks.	CBT-I reduced ISI by 9.9 points from baseline compared to 4.7 from MEC. CBT-I reduced PSQI by 4.0 points compared to 1.4 from MEC. 84% of women had ISI scores in the no insomnia range at 24 weeks post beginning intervention.
Kalmbach et al. (2019)	RCT, single-blinded	To evaluate whether CBT-I improves daytime fatigue, energy, self-reported sleepiness, work productivity, and quality of life in postmenopausal women with insomnia, and whether sleep restriction therapy (SRT) – a single component of CBT-I – is equally efficacious.	USA	Postmenopausal women with peri/postmenopausal onset or exacerbated chronic insomnia	150	Women randomised to three conditions: Sleep hygiene education w/ 6 weekly emails with information SRT w/ 2 week intervention with a face to face session, three telephone follow ups, then one last face to face session CBT-I w/ 6 weekly face to face sleep therapy sessions with a trained practitioner	CBT-I and SRT groups had moderate-to-large improvements in fatigue, energy, sleepiness, and work function at posttreatment then 6 months later. CBT-I report higher quality of life via emotional wellbeing and resiliency

Abdelaiz et al., (2021)	RCT, no blinding	To evaluate the efficacy of an internet-based CBT program on sleeping difficulties in menopausal women	Saudi Arabia	Menopausal women with poor sleep quality	80	Intervention group engaged in CBT via six online modules. Each module included: reflections and feedback from past module, powerpoint presentation, instructions, homework, and videos. Regular feedback weekly was provided.	Significant improvement in sleep hours and sleep efficiency in intervention. Sleep quality and insomnia index scores were reduced significantly from baseline in the intervention group.
Farsani et al., (2021)	RCT, blinded	To evaluate the effectiveness of CBT-I on insomnia severity and sleep quality	Iran	Postmenopausal women	46	Intervention received six sessions of CBT-I with a trained practitioner.	Mean sleep efficiency improved in CBT-I group, and markers of insomnia decreased significantly throughout the intervention.
Green et al., (2019)	RCT, blinding	To evaluate the effectiveness of cognitive behavioural therapy for menopausal symptoms compared to a waitlist condition	Canada	Peri- and postmenopausal women	71	Intervention received 12 weekly sessions at 2 hours each in small groups. Learning was solidified through weekly exercises.	Significant improvement in PSQI in intervention after controlling for confounders, and improvement sustained 3 months after.
Abbreviations: CBT – cognitive behavioural therapy CBT-I – Cognitive behavioural therapy for insomnia ISI – insomnia severity index MEC – menopause education control PSQI – Pittsburgh Sleep Quality Index RCT – randomised control trial SRT – sleep restriction therapy VMS – vasomotor symptoms							

2.6.3.2 CBT for VMS

The majority of research conducted on CBT influencing experience of VMS was through a set of randomised control trials under the title of 'MENOS'. Conducted in the UK, these trials aimed to explore the impact of CBT in various formats (self-help or guided) on improving menopause-related quality of life (Ayers et al., 2012; Balabanovic et al., 2013; Hardy et al., 2018; Mann et al., 2012). The MENOS trials required women to be experiencing at least 10 problematic hot flashes or night sweats (HFNS) a week for the past month, and these HFNS had to reach a certain threshold of problematic to be included in the trials (Ayers et al., 2012; Balabanovic et al., 2013; Hardy et al., 2018; Mann et al., 2012). All trials found significant improvements in HFNS bother and interference or problem rating after engaging in CBT

(Ayers et al., 2012; Hardy et al., 2018; Mann et al., 2012), and these findings were sustained up to 26 weeks after randomisation to the intervention (Ayers et al., 2012). A qualitative evaluation of the MENOS 2 trial found women appreciated the CBT sessions for their ability to allow women to feel that they were more able to cope with VMS, and have an increased sense of control over these symptoms (Balabanovic et al., 2013). The MENOS trials being conducted over multiple years, and in varying contexts including the workplace (Hardy et al., 2018), demonstrates that CBT likely improves the experience of problematic HFNS for women who engage in the intervention. Beyond MENOS, other trials have also investigated the impact of CBT on HFNS with similar results. Green et al., (2019) found a CBT intervention targeting women with problematic menopausal symptoms also alleviated self-perceived rating of VMS interference and bother; this finding being supported by Fenlon et al., (2020) who noted group CBT reduced HFNS problem rating by 46% up to 20 weeks after the CBT intervention concluded. Internet based CBT interventions are also thought to have efficacy in reducing HFNS, with self-guided and therapist-guided internet CBT interventions significantly reducing the impact of HFNS for women, and being again sustained up to 18 weeks after intervention conclusion (Atema et al., 2019). Across these studies, it is clear that CBT delivered across multiple formats whether that is group, one-on-one, self-help, or online, demonstrates efficacy in reducing the problematic HFNS which impact women throughout the menopausal transition and into postmenopause. Further, the prevalence of significant differences being sustained between 18 and 20 weeks post randomisation is positive, indicating this approach is efficacious in the long term for managing VMS. This varied modality of CBT demonstrating significant results provides strong evidence that CBT should be considered as a non-pharmacological approach to support women struggling with problematic VMS.

While the results are promising for CBT to manage VMS, only half of these studies considered women with a spontaneous menopause who were perimenopausal or postmenopausal (Ayers et al., 2012; Green et al., 2019; Hardy et al., 2018); the remainder considered women who were being treated for breast cancer due to the impact of treatment inducing menopausal symptoms, namely VMS (Atema et al., 2019; Fenlon et al., 2020; Mann et al., 2012). As discussed earlier, the induced menopause occurs as a result of treatments which disrupt ovarian function and induce menopausal symptoms (Ambikairajah et al., 2022;

Pillay & Manyonda, 2022). So, while the findings are consistently significant for CBT improving experience with HFNS, there is a need for stronger evidence from cohorts where women had a spontaneous menopause to solidify these findings and strengthen the evidence base. It is also important to note that while the findings of these studies were all significant in improving the interference, bother, and self-perceived problem-rating of VMS, it did not consistently reduce the intensity or frequency (Green et al., 2019). So, it seems the benefit of CBT is providing women with the tools to cope with problematic VMS, as elucidated by Balabanovic et al., (2013), but it is not clear whether CBT can improve intensity and frequency of VMS at a physiological level. Further research should be conducted replicating these trials and specifically investigating this association to confirm whether CBT can improve these factors as well.

Table 9.

Cognitive behavioural therapy interventions in menopausal women and their impact on vasomotor symptoms

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Ayers et al., 2012	RCT, non-blinded	To examine the effectiveness of CBT and self-help CBT in reducing hot flush and night sweat (HF/NS) problem rating at 6 and 26 weeks after randomisation MENOS 2	UK	Women with 10 or more problematic HF/NS a week for at least a month	140	No Treatment Self-help CBT Group CBT Measured HF/NS problem rating WHQ SF-36	CBT interventions significantly reduced HF/NS problem rating at 6 weeks and 26 weeks. Group CBT had Improved mood and QoL at 6 weeks, and improved emotional & physical functioning at 26 weeks.
Balabanovic et al., 2013	RCT, non-blinded	To examine the MENOS 2 participants experience of the CBT treatments	UK	Women with 10 or more problematic HF/NS a week for at least a month	20	10 women from self-help and 10 from group gave feedback on how they found the interventions	Women felt these were positive and helpful, and increased ability to cope and sense of control over HF/NS Making sense of symptom change, new ways of coping and gaining control, acknowledging and

							challenging the menopause taboo, social interaction and support versus individual learning
Green et al., 2019	RCT, non-blinded	To evaluate the effectiveness of CBT for menopausal symptoms (CBT-Meno) compared with a waitlist condition.	Canada	Perimenopausal or postmenopausal women seeking treatment for menopausal symptoms	71	Intervention: CBT-Meno with psychoeducation, and cognitive & behavioural strategies for mood and VMS Waitlist control	Significant improvement in VMS interference and bothersomeness, but not frequency or severity
Hardy et al., 2018	RCT, non-blinded	To examine the efficacy of an unguided, self-help cognitive behaviour therapy (SH-CBT) booklet on hot flush and night sweat (HFNS) problem rating, delivered in a work setting	UK	Women 45-60, experiencing 10+ problematic HFNS a week MENOS @ work	124	4 weeks Intervention: a brief, unguided SH-CBT booklet Control: waitlist control	Significant improvement in HFNS problem rating at 6 weeks and at 20 weeks. Also reduced HFNS frequency and beliefs & behaviours.
Fenlon et al., 2020	RCT, non-blinded	To investigate whether group CBT, delivered by breast care nurses, can reduce the impact of HFNS	UK	Women with primary breast cancer following primary treatment with 7 or more HFNS a week reaching a threshold on the HFNS problem rating scale	130	Control: treatment as normal Intervention: Group-CBT + usual treatment. 6 weeks, 90 minute group CBT sessions, nurses following structured manual Measure at 9 and 26 weeks	CBT had a 46% reduction in mean HFNS problem rating score at 26 weeks post-randomisation HFNS frequency improved
Mann et al., 2012	RCT, non-blinded	To investigate whether CBT can help breast cancer survivors to effectively manage HFNS	UK	Women from breast clinics with problematic HFNS of 10+ problematic episodes a week	96	Control: usual care Usual care + group CBT 6 weeks with one 90 minute session weekly MENOS 1	Group CBT significantly reduced HFNS problem rating at 9 weeks compared to usual care, and maintained at 26 weeks post randomisation
Atema et al., 2019	RCT, non-blinded	To evaluate the effect of internet-based cognitive behavioural therapy (iCBT) with or without therapist support, on the perceived impact of HF/NS and overall levels of menopausal symptoms (primary outcomes),	Netherlands	Breast cancer survivors	254	Control: waitlist control Intervention 1: therapist guided CBT Intervention 2: self-managed CBT 6 weeks Questionnaires at 10 and 24 weeks post randomisation	Both CBT groups reported significant decrease in impact of HFNS, guided slightly higher Long term significant improvement maintained at 24 weeks

		sleep quality, HF/NS frequency, sexual functioning, psychological stress, and HRQoL in breast cancer survivors with treatment-induced menopausal symptoms					
Abbreviations: CBT – cognitive behavioural therapy HFNS – hot flushes & night sweats HF/NS – hot flushes & night sweats HRQoL – health-related quality of life iCBT – internet based cognitive behavioural therapy SF-36 – 36 item short form survey SH-CBT – self-help cognitive behavioural therapy							

2.6.3.3 CBT for Mood Changes

The success of CBT as a treatment for depressive and anxiety symptoms is well documented in the literature with regard to the general population (Curtiss et al., 2021; Gautam et al., 2020). Despite this, minimal trials have considered utilising CBT for depression and anxiety symptoms related to the menopause transition; the majority of CBT interventions for menopausal symptoms focus on VMS, as discussed in the above section. Of the four trials included in this section, two found a significant improvement in depressive symptoms after engaging in a CBT intervention (Green et al., 2019; Khoshbooi et al., 2011), one found a significant improvement in anxiety symptoms (Kim et al., 2024), whilst the other found improvements in both (Green et al., 2013). Interventions were conducted over 8 to 10 weeks, and sessions were once or twice weekly depending on intervention design. This suggests that CBT interventions delivered over this length of time and at this frequency are successful in supporting women with depressive and anxiety symptoms. When interpreting these results, however, we need to consider the populations investigated. Two of the cohorts were based in Canada, with participant sizes of 71 and 8 (Green et al., 2019; Green et al., 2013), and the others were in Korea and Iran, with 40 and 44 participants respectively (Khoshbooi et al., 2011; Kim et al., 2024). These are different populations and small cohort numbers, therefore the results can first and foremost not be generalised to other cohorts. Due to the solid evidence-base for CBT as a therapy for depressive and anxiety symptoms in the general population, it stands to reason that this treatment effect would be seen in the

population of menopausal women, and therefore further studies should be conducted to build upon these initial findings.

Table 10.

Cognitive behavioural therapy interventions in menopausal women and their impact on mood-related symptoms

Article	Study Design	Purpose	Country	Sample	N	Intervention	Results
Green et al., 2019	RCT, non-blinded	To evaluate the effectiveness of CBT for menopausal symptoms (CBT-Meno) compared with a waitlist condition.	Canada	Perimenopausal or postmenopausal women seeking treatment for menopausal symptoms	71	Intervention: CBT-Meno with psychoeducation, and cognitive & behavioural strategies for mood and VMS Waitlist control	Significant improvement in CBT-meno for depressive symptoms on BDI
Kim et al., 2024	RCT, non-blinded	To focus on the development and verification of the efficacy of a CBT protocol designed specifically for Korean perimenopausal women	Korea	Menopausal women	40	Control: treatment at usual from gynaecologists Intervention: 60 minute sessions for 8 weeks	CBT group showed significant improvement in MRS CBT significant improvement in GAD-7 (anxiety)
Green et al., 2013	RCT, non-blinded	To develop a cognitive-behavioural group treatment program as alternative or complementary treatment option for reducing the frequency and intensity of debilitating menopausal symptoms in midlife women	Canada	Menopausal women referred via Women's Health Concerns Clinic and community advertising	8	Intervention: 10 week pilot group with CBT	Reduction in depression and general anxiety from baseline Participant report high satisfaction with treatment
Khoshbooi et al., 2011	RCT, non-blinded	To study the effectiveness of group CBT on depressed women who are around menopause in regard to menopausal status	Iran	Women around menopause period	44	Intervention 16 sessions of group-CBT twice weekly over 8 weeks	Depression decreased significantly based on beck's depression index
Abbreviations: CBT – cognitive behavioural therapy GAD-7 – general anxiety disorder-7 MRS – menopausal rating scale RCT – randomised control trial VMS – vasomotor symptoms							

2.6.4 Wellness Coaching Interventions

Many of the non-pharmacological approaches to addressing climacteric symptoms discussed above have demonstrated some efficacy in improving symptom experience. Therefore, it stands to reason that combining multiple approaches into an overall holistic intervention

may confer additive benefits. Wellness coaching, also known as health coaching, is an emerging treatment with a promising approach for improving health in the general population (Hill et al., 2015), as well as within different clinical populations such as those with chronic illness (Boehmer et al., 2023) or pain (Barnet-Hepples et al., 2024). Indeed, of the current wellness coaching interventions available in the literature, there is often a positive impact on the participants involved (Boehmer et al., 2023; Hill et al., 2015). Although there is no exact guidelines for implementing a wellness coaching intervention which is effective, there is enough evidence to suggest that developing programmes to the needs of participants will allow for health improvement (Potempa et al., 2023; Yang et al., 2025)

Wellness coaching for menopause is not well represented in the literature at present. Despite this, the few studies reported significant positive outcomes from engaging in the intervention (Almeida et al., 2016; Anderson et al., 2015; Fujimoto, 2017; Shokri-Ghadikolaei et al., 2022). In fact, despite different modalities and lengths of the coaching interventions published, the approach of a holistic program focussing on improving QoL is beneficial across the board. More specifically, depressive and anxiety symptoms improved significantly after engaging in one on one coaching sessions, both virtual (Almeida et al., 2016; Anderson et al., 2015) and in person (Anderson et al., 2015; Shokri-Ghadikolaei et al., 2022), however women who engage in face-to-face coaching have a more significant improvement when compared to virtual or control conditions (Anderson et al., 2015). Wellness coaching has also proven to significantly improve self-efficacy in the intervention group (Fujimoto, 2017) and decrease experience of menopausal symptoms overall (Almeida et al., 2016; Shokri-Ghadikolaei et al., 2022). However, none of these studies followed a consistent method of applying health coaching and there is no standardised framework utilised with regards design and implementation across these studies. Furthermore, the cohorts did not have similar requirements for participation, which makes it difficult to interpret the results with confidence. Without a clear theoretical basis across all studies, and the lack of insight into what specific aspects of the programme were the most effective for participants, it remains unclear how to implement an effective wellness coaching programme to support women who experience climacteric symptoms and improve the QoL of menopausal women. Work should be put into understanding the aspects of coaching which benefit women and making

these the foundation of future interventions to provide an evidence-based intervention which is accessible and applicable for the participants.

To the knowledge of the researcher there are minimal studies which have evaluated the qualitative experience of participants who engage in wellness coaching programmes. One study conducted in Turkey implemented a 12-week wellness coaching intervention in adolescents to improve lifestyle change, however, the main significant result was weight loss rather than improvement in overall wellness (Altunkurek & Bebis, 2019). There is limited qualitative information on health coaching, which is related but not delivered in the same way as a wellness coaching programme. One study retrieved on health coaching in the United States in a population of patients, friends/family, clinicians, and health coaches, found that personal support, time, and a trusting relationship were key components of success in this programme (Thom et al., 2016). To that end, in the New Zealand context as far as we are aware there is no relevant literature in this space.

It is the hope that the present research study will elucidate not only the impact of wellness coaching on women's menopausal symptoms, but the qualitative understanding of why this wellness coaching worked for these women. This is a promising area of research which allows the combination of multiple lifestyle factors which are shown to have effectiveness, delivering a non-hormonal treatment for menopausal women with the potential for a higher treatment satisfaction and efficacy.

2.7 Summary

This literature review provided context to the transitional period of menopause, the symptoms associated with this period of time, and the current approaches both pharmacological and non-pharmacological to support women. Lifestyle approaches are increasingly preferred by women experiencing symptoms, however there are minimal data on the true efficacy of these on menopausal symptoms. Further, the combination of lifestyle interventions as a wellness coaching programme is not strongly represented in the literature as a method for approaching climacteric symptoms. It is clear from the current research available that women enjoy engaging in these non-pharmacological approaches for their symptoms and are open to engaging in these more.

CHAPTER 3: MANUSCRIPT

3.1 Abstract

Introduction: Menopause is a biological process that all women will traverse as they age into midlife. Physical, emotional, and mental changes are the hallmark of this process, with some women requiring intervention to improve quality of life.

Aim: This pilot study had two aims. The first was to explore the lived experience of women with menopause. The second was to qualitatively evaluate the effective components of a menopause wellness coaching intervention and its implementation.

Methods: Semi-structured interviews were conducted with women who enrolled in the wellness coaching programme pilot. The programme involved coaching in the following domains: nutrition, exercise, sleep, mental wellbeing. Interviews were conducted prior to beginning the programme (baseline – 0 weeks), and halfway through the programme (midpoint - ~8 weeks). They were conducted from June to September 2025. Interviews were audio recorded, transcribed, and thematically analysed.

Results: Twelve women were interviewed in total (12 at baseline, seven at midpoint). Baseline interviews identified four key themes for women's experience with menopause: lack of knowledge of menopause, menopause as a taboo topic, impact of menopause on daily life, wanting to feel supported with menopause. Midpoint interviews identified four key themes from engagement with the programme: a need for empathetic coaching, barriers to engaging in behaviour change, practical tips to enhance lifestyle, and improvement in holistic wellbeing. Women all reported a lack of knowledge of menopause and found that engagement in the programme was facilitated due to the empathetic approach of the coaches, and there was an improvement in overall wellbeing at the midpoint of the intervention.

Findings: The findings demonstrated a landscape for women with menopause which has lacked evidence-based information, placed a taboo on speaking of it, leading to women struggling with symptoms and seeking support. Wellness coaching interventions can begin to

address these pain points, providing women with practical tips and emotional support to manage this stage of their life. Further studies should be conducted to evaluate the impact of a holistic wellness coaching intervention, to identify the total efficacy of wellness coaching programme to improve QoL in women with menopause.

3.2 Introduction

Women in their midlife (50 years old \pm 20 years) make up around 25% of the world's population, with this number exponentially increasing (Infurna et al., 2020; Kirchengast, 2024). The midlife is associated with a myriad of changes; menopause, a biological process onset during this stage of life, is one of these changes (Kirchengast, 2024). Menopause is defined as the end of a woman's reproductive life, signified by a final menstrual period (FMP) (AMS, 2016; Hall, 2015). It is a gradual process in which a woman transitions from perimenopause, a stage of fluctuating reproductive hormones and irregular menstrual cycles, to postmenopause, where the menstrual cycle ends and reproductive hormones enter their new normal (Harlow et al., 2012).

This transition to menopause is characterised by stark changes, both physically and mentally; this is a period of life where a woman has to navigate her changing body, alongside the unique stressors of being a woman in her midlife (Thomas et al., 2018). Despite the prevalence of menopause, women are unprepared, feel shame around this process, and feel less able to manage their commitments as they once did due to factors such as brain fog and feeling overwhelmed (Wood et al., 2025). Symptom onset such as hot flushes and night sweats (collectively known as vasomotor symptoms (VMS)), depression, anxiety and sleep disturbances disrupt a woman's life, drawing them to seek increased support to cope (Davis et al., 2015). For some women, these symptoms are severe enough to become detrimental to their quality of life (QoL) (Hutchings et al., 2023).

The gold-standard, medical first-line treatment for menopausal symptoms is menopausal hormone therapy (MHT), followed by anti-depressants if MHT is not tolerated or contraindicated (Baber et al., 2016). Despite evidence supporting the use of MHT for menopause, past controversy has induced hesitancy in both women and healthcare providers for the administration of this medication for menopausal symptoms (DePree et al.,

2024). Further to this, women who trial this medication and find a mixed efficacy are dissuaded to continue adhering to treatment (DePree et al., 2024). As a result, women are seeking alternative treatments such as lifestyle changes to address their symptoms (Kingsberg et al., 2024).

Lifestyle changes commonly engaged in for menopausal symptoms include a healthy diet pattern including fruits, vegetables and lean meat, physical activity, and seeking support for mental wellbeing such as engaging in cognitive behavioural therapy (CBT) (Hunter, 2021; Kingsberg et al., 2024). Interventions based on these lifestyle changes for menopausal women demonstrate significant efficacy, reducing total symptoms and severity of symptoms in women who engage (Ayers et al., 2012; Kingsberg et al., 2024). Despite this efficacy, lifestyle interventions often have a high rate of attrition and a low adherence, indicating they are only effective for women who engage consistently with the change (Crichton et al., 2012; Linke et al., 2011). This signals a need for lifestyle changes which women feel they can comply to over a long period of time.

Wellness coaching is an emerging intervention for wellbeing which combines multiple lifestyle changes as a tailored, client-centred programme (Rodrigo et al., 2023). Based on behaviour change theory, wellness coaching aims to provide people who engage with information to achieve their desired behavioural goals, encouraging autonomy in their lives (Matthews et al., 2024). Wellness coaching interventions have demonstrated efficacy in developing long-term behaviour change, and improving QoL (Clark et al., 2014; DeJesus et al., 2018). Such programmes for women with menopause are limited and not well documented in the literature; however, the literature available does demonstrate an ability to improve self-efficacy and reduce total menopausal symptoms for women who engage (Fujimoto, 2017; Shokri-Ghadikolaei et al., 2022). In New Zealand there are multiple coaching type programmes for women with menopause, showcasing client success stories of improved wellbeing. Primarily these are individual providers, some founded by women with a shared experience of menopause. However, it is unclear what approaches these programmes take, and if they focus on behavioural change. This study aims to evaluate the lived experience of women with menopause prior to engagement with a wellness coaching programme, and to elucidate the effective components of a wellness coaching programme as

well as the benefits sustained at the halfway point of the intervention. This study intends to identify the main pain points women experience upon entering menopause, and what aspects of a wellness coaching intervention support women to not only cope, but thrive during this time of life, providing insight into the development of further wellness coaching interventions for women with menopause.

3.3 Methods

3.3.1 Study Design

This present study is one component of a larger crossover randomised control trial being conducted to evaluate the efficacy of a wellness coaching intervention for menopausal women to improve menopause-related QoL. The larger study utilised a mixed-method approach to understand the impact of the wellness coaching intervention. This thesis reports on one component of this large study, guided by the following two research questions:

1. What is the lived experience of women with menopause in New Zealand?
2. What makes a wellness coaching programme for menopause effective, and what benefits can be sustained from engagement?

To focus on these research questions qualitative data was collected via semi-structured interviews, conducted prior to and halfway through the intervention, which were transcribed and analysed to understand their lived experiences. Interviews were conducted at the halfway point due to time constraints. Qualitative data was chosen for this project due to its nature of providing context to the human experience which quantitative data such as numbers cannot draw out themselves; qualitative data provides a “how” and a “why” (Cleland, 2017). Interviews were conducted from June 2025 to September 2025.

The wellness coaching programme for menopause was designed and facilitated by an external wellness coaching programme provider (Imago Wellness Coaching). For this project the women were provided the programme at no cost to them. The programme delivered content in line with four pillars of health with efficacy in improving wellbeing: nutrition, exercise, mental wellbeing, and sleep training (focussing on sleep hygiene and quality of sleep). The intervention consisted of an initial goal-setting session at 45 minutes, two

sessions each under each pillar of health around 20 minutes each, and a summative session to evaluate progress (i.e., a total of 10 sessions). Sessions were facilitated by expert coaches dedicated to their pillar, with some coaches spreading their expertise across multiple pillars. Coaches aimed to provide small behaviour change strategies to participants, working with their interests and goals. For instance, the physical activity pillar was individualised based on the participants engagement in physical activity at baseline – someone who was already active would be provided tips on mobility and maintenance, and another who was relatively sedentary would be provided tips on how to increase movement. Strategies such as journaling and mindfulness are tools the coaches utilised when working with participants. Women were able to book their sessions in any order, and were encouraged to book all their sessions within 16 weeks of beginning the programme to allow optimal time for behaviour change to occur.

3.3.2 Ethics

This study was reviewed and approved by the Massey University Human Ethics Committee on 8/04/2025 (ethics number OM1 24/55). The following ethical concerns were acknowledged and mitigated as part of the ethics application: informed consent, confidentiality, participant wellbeing.

- Participants were provided a comprehensive participant information sheet detailing the study and their involvement. Participants then provided written consent to voluntarily participate, with the knowledge that they were able to withdraw from the research study up until two weeks after data collection was completed, which would not impact their level of care in the programme.
- To ensure participant privacy data was treated appropriately; transcripts were de-identified, and audio recordings and transcripts were stored securely in line with university policies and guidelines.
- Due to the sensitive nature of the discussion around menopause, women were provided resources to access further support if there was distress after completing an interview.

3.3.3 Participants, Recruitment & Sample Size

All participants were recruited for the research study via advertisement of the wellness coaching programme by the external provider, using social media and word-of-mouth. Women who expressed interest were provided the participant information sheet (PIS) and consent form (both found in Appendix A) to provide information and allow for enrolment in the research study. After recruitment, the programme provider randomised women into either intervention (the wellness coaching programme) or control (waitlist). The research team had no role in randomisation.

The research population included women who self-reported as peri- or postmenopausal. The programme provider screened women for menopausal status using the STRAW+10 guidelines (Harlow et al., 2012) to ensure only women who were menopausal were enrolled into the programme. The screening questionnaire included criterion for each stage for women to aid their selection of menopausal status. Women who did not self-report as menopausal were unable to enrol in the research study. No screening was conducted by the researcher or extended research team, and women were only screened for menopausal status. Participant characteristics were not collected as this was not part of the data collection protocol for the present study.

There is no consensus for the appropriate number of interviews required in qualitative research to reach data saturation (Wutich et al., 2024). However, approximations have been suggested depending on the nature of the qualitative research. For research interested in the “lived experience” of participants, the number of interviews required ranges from at least 6 to at most 25 interviews (Bekele & Ago, 2022). Aiming for data saturation is imperative in qualitative research; without this data presented is at a risk of being incomplete, and conclusions drawn from analysis could misrepresent the phenomenon being explored (Ahmed, 2025). To ensure the researcher gathered enough rich data to answer the research questions it was decided 10 women recruited would be sufficient. However, to allow for attrition, 12 women were recruited to ensure enough data could be collected.

3.3.4 Semi-Structured Interviews

3.3.4.1 Interview Rationale

This present study wanted to evaluate the lived experience of women who were traversing through menopause, enabling an understanding of their unique experiences first-hand. Qualitative research studies focussing on lived experience such as this often utilise semi-structured interviews; this method of data collection allows for participants to provide richer data bolstered by cues outside of the words being spoken i.e. tone and body language (Kakilla, 2021). Further, the semi-structured nature of the interviews allow for multiple topics to be discussed, with a flexible approach to allow the conversation to flow naturally to draw out responses the participant may not have presented from a less interactive method of data collection (Kakilla, 2021).

3.3.4.2 Interview Schedule Development

Two interview schedules were developed: one for the baseline interview and for the midpoint interview. These schedules were designed by the researcher and cross-checked by the supervisory team to gain an in-depth understanding of the lived experience of women traversing through menopause and be used when conducting interviews. The interview schedules used can be found in Appendix B.

The baseline interview schedule utilised open-ended and guiding questions to elucidate the unique experiences of women when they entered menopause, their personal experience of managing menopause, as well as strategies currently employed to manage symptoms related to menopause. Women were also asked their motivation for joining the programme, and what they would like to achieve through engagement with said programme. If women were unclear of how to answer the open-ended questions, or aspects of the open-ended questions were not addressed, follow-up prompts were used to clarify information the researcher was trying to gather.

The midpoint interview schedule utilised the same approach of open-ended and guiding questions to understand the experience of women who were engaged in the wellness programme. The questions aimed to highlight the enablers and barriers to engagement in the programme, and any personal improvements experienced by the women. As prior, if

women were unclear on how to answer the open-ended questions or further information was required, follow-up questions were used to help women answer the wider question.

The interview schedule for the baseline interviews was amended after the first two interviews due to one question not resonating with participants and therefore not providing sufficient data. The remaining ten women received the updated question. Similarly, the midpoint schedule was adapted after the first interview to include two additional closed questions after the first participant brought up specific aspects of the programme which the researcher deemed relevant to ask all participants.

3.3.4.3 Interview Procedure & Data Collection

Semi-structured interviews were conducted online through Zoom (Zoom Communications Inc. Version 6.3.10) and audio recorded using this platform by the primary researcher at two time points: prior to entering the intervention, and halfway through the intervention. Women were encouraged to speak freely, with the researcher guiding the conversation back on track when required. Interviews were transcribed verbatim for analysis.

3.3.4.4 Interview Data Analysis

Reflexive thematic analysis is a well-known method for analysing qualitative data (Braun & Clarke, 2006), and was used to analyse the interview transcripts in this study. Thematic analysis (TA) consists of six phases (Ahmed et al., 2025; Braun & Clarke, 2006):

1. Familiarisation with the dataset
2. Coding
3. Generating initial themes
4. Development and reviewing of themes
5. Refining, defining, and naming themes
6. Writing up the analysis

TA was chosen as it was considered the most applicable method for analysis of interview transcripts due to its ability of elucidating the lived experiences, views, and perceptions of people which was most relevant to the aims and objectives of the present research (Braun &

Clarke, 2006). Furthermore, TA is best at elucidating a certain groups' key understandings of the phenomenon in question (Joffe, 2011; Swain, 2018); in this case, menopause.

Familiarisation with the dataset was achieved through immersion: both through reading through transcripts and listening to audio of interviews. This process allows the researcher to begin an observational analysis of the data, building both familiarity and a deeper understanding of the data before beginning the more formal analysis process (Braun & Clarke, 2012). The researcher is then well placed to begin coding the data.

Codes are the building blocks of thematic analysis. The coding process requires the identification and labelling of data points in the interviews. Coding is not intended to provide an analysis of the content, rather acts as a recognition of the meaning of the data prior to interpretation (Braun & Clarke, 2012; Fereday & Muir-Cochrane, 2006). Through the coding process the researcher begins to see which data points can be ascribed to the research question; in this case, questions (Braun & Clarke, 2012).

A hybrid approach of both deductive and inductive coding was utilised to code the interview data (Fereday & Muir-Cochrane, 2006; Swain, 2018). The deductive approach requires analysis to be based upon pre-determined codes based on theory expected from the data (Crabtree & Miller, 1999). In this case, it was expected that codes would relate to each of the pillars being investigated: sleep, exercise, nutrition, mental wellbeing. The inductive approach followed an inverse process, looking first at the data and subsequently developing codes based off these, allowing unique codes and themes to be brought through (Boyatzis, 1998; Bryman, 2016).

Themes are then developed from the codes identified (Braun & Clarke, 2012). This process of searching for themes, developing and reviewing them, and refining them, relies on the ability of the researcher to generate a story related to the research question from the information provided (Ahmed et al., 2025). This process requires codes to be reviewed and those which share similar features to be grouped, allowing for a pattern and so theme to emerge (Braun & Clarke, 2006, 2012). Upon reviewing the themes it is important to clarify that themes do not repeat one another, but are related, and address the research question/s (Braun &

Clarke, 2012). Themes which did not meet these requirements were reworked or discarded (Ahmed et al., 2025).

The coding process and development of themes was discussed regularly with a supervisor to ensure consistent and standardised coding across all transcripts. This process ensured there was no projection of own bias and ideologies allowed to infiltrate the meaning of participant data (Boyatzis, 1998). This cross-checking ensured inter-rater reliability and a trustworthiness of the themes being drawn out.

3.4 Results

A total of 12 participants were interviewed: all 12 completed baseline interviews, and seven completed midpoint interviews (see table 11). The following sections include excerpts from the interviews to support claims being made. Where appropriate and needed, slight edits have been made to the except for readability without changing the meaning.

Table 11.
Participant involvement in interviews at baseline and midpoint of wellness coaching intervention

Participant	Baseline Interview	Midpoint Interview
Two	Y	N
Three	Y	Y
Five	Y	N
Six	Y	Y
Seven	Y	N
Eight	Y	Y
Nine	Y	Y
Ten	Y	Y
Eleven	Y	Y
Twelve	Y	Y
Thirteen	Y	N
Fourteen	Y	N

3.4.1 Baseline Interview Results

Data analysis revealed four key themes from the baseline interviews: lack of knowledge of menopause, menopause as a taboo topic, impact of menopause on daily life, and wanting to feel supported with menopause (see table 12).

Table 12

Baseline Interview Theme Overview

Theme	Sub-theme
Lack of knowledge of menopause	<i>Lack of knowledge of menopause symptoms</i> <i>Lack of awareness of symptoms related to ageing or menopause</i> <i>Lack of understanding of physiology of menopause</i>
Menopause as a taboo topic	<i>Taboo topic with older generations</i> <i>Increasing awareness in current times</i>
Impact of menopause on daily life	<i>Poor sleep</i> <i>Decreased performance at work</i> <i>Lower self-perceived wellness</i> <i>Low energy</i>
Wanting to feel supported with menopause	<i>Tips and education</i> <i>Personalised support</i> <i>Natural approach to menopause</i>

3.4.1.1 Lack of Knowledge of Menopause

All participants interviewed identified having a lack of knowledge of menopause before entering it themselves. This lack of knowledge was described in three ways: a lack of awareness of symptomatology, an inability to distinguish between age-related symptoms or other physiological changes, and a lack of understanding of physiological process underpinning menopause.

For two participants, a lack of awareness of the broad and varied symptomatology of menopause was their main knowledge barrier. For example, Participant Nine shared their lack of knowledge around mood, stating: *“I experienced a lot of anxiety and not so much mood swings. And I didn't realize until later on that that was a part of [menopause].”*

Participant Six struggled with the VMS symptomology of menopause, sharing: *“no one tells you that you're going to have hot flashes every day.”*

Two participants specifically noted their lack of knowledge of symptoms related to menopause or other physiological changes. Considering the impact of ageing, Participant Fourteen shared: *“it’s not knowing whether that’s me as I get older, or whether it’s a menopause symptom... is this just me as I get older, and I’m going to be like this?”* Participant Three shared this confusion around distinguishing between age-related symptoms and menopause-related symptoms, stating: *“I don’t know if it’s just me ageing or it’s an actual menopause thing.”*

Three participants discussed their lack of understanding of the physiological changes underpinning the menopausal transition and the impact of these changes. For example, Participant Two expressed their experience entering the menopausal transition, sharing: *“I didn’t know about the biology of [menopause]. I knew the symptoms vaguely.”* Participant Two then continued to discuss how this lack of awareness of hormonal changes impacted their ability to identify their own symptoms, stating: *“I think that we kind of explain [symptoms] away, because you don’t realise that all of it is linked to hormonal changes.”* Participant Six also shared their confusion around menopause biology and symptoms: *“I couldn’t quite understand why or how hormones would make your body temperature change?”* Although Participant Eight had a level of awareness of the broad physiological changes which occurred during menopause, she shared this still left them unprepared for the impacts of these, sharing: *“I knew the physiology of [menopause]... your period stopping and the hormone levels dropping... but I didn’t actually really anticipate or think about any of the symptoms, or how I might feel.”*

3.4.1.2 Menopause as a Taboo Topic

A second theme identified from the baseline interviews was the taboo around speaking on menopause prior to beginning menopause themselves. Participant Thirteen expressed a lack of communication on the topic, explaining: *“[menopause] was not something that was spoken about with my mum, and it wasn’t really out there to learn a lot about it.”* Participant Twelve echoed this sentiment, considering the wider social acceptance of speaking of women’s health, sharing: *“you never talk about [women’s health], and these are things that affect females, but people don’t talk about it.”*

Two participants explicitly noted an increased awareness of menopause in the current social environment compared to the past. For instance, Participant Nine explained: *“it’s much more accepted to talk with friends now on what I’ve experienced.”* In a similar vein, Participant Thirteen noted the abundance of knowledge and discussion on menopause today, sharing: *“the current times, 2025 where there’s lots of podcasts, [menopause is] on the radio. You hear lots of adverts for [menopause]. [Menopause is] even talked about in the workplace. Things have changed a lot.”*

3.4.1.3 Impact of Menopause on Daily Life

Seven participants expressed the impact of menopause and its related symptoms on their daily life. For instance, Participant Thirteen noted sleep-related symptoms impacted their performance at work, explaining:

...when you get up in the morning and you’re exhausted, it makes a long day at work, and you think, how am I going to get through the day, driving there, sitting in front of a computer screen all day, and then coming home, it’s just such a long day, and then you just can’t wait to get to bed again.

Sleep disturbances were attributed by Participant Eight as the biggest impact on their life due to its impact of their self-perceived wellness, stating:

...it’d be nice to get somewhere near 80 or 90%, rather than being sort of 50/50, whether you get up in the morning and go [to work], Oh, I’m so tired, or, you know, I don’t feel quite with it, or, you know, I don’t, I just don’t feel quite physically great.

Participant Twelve built upon this experience of menopause impacting performance and feelings of wellness, sharing how their participation in daily life has decreased since entering menopause, explaining:

I used to get up, do exercise at 5:30am and then go to work. I used to drive to work, come back, pick the kids up, work.... but now it's just gone downhill, and I'm like, what is going on? You know? What's happened to me?

Participant Ten shared their experience with managing a lack of energy:

I don't get enough sleep, and so everything is just out of control. And all my energy, my little bit of energy that I have, goes into work, yeah, not housework, but work, work. And I don't have any energy for anything.

3.4.1.4 Wanting to Feel Supported with Menopause

The fourth theme identified from the baseline interviews centred around women expressing a want for being supported in their menopause journey. The women envisioned this support in different ways. For example, Participant Three wanted practical support through the provision of tips: *"I just wanted to check in with myself and just make sure I was okay and equipped for the next 100 years, you know..."* Participant Eleven valued tips and education as support for their menopause journey, sharing: *"If I can learn more about myself or my body or how I can, you know, cope with it, then that's fantastic."* Participant Thirteen expressed a need for tips which would support overall wellbeing, stating: *"...just give me some tips and tricks, I guess, to try and improve my wellbeing, which is the number one thing . . . which would have a trickle effect on the rest of my life..."*

Two women expressed wanting support in the form of personalised support. Participant Twelve shared this emphatically, stating: *"I feel like I can't do it myself. That's why I was like, I just need someone to help me and tell me what's going on with my body. I just don't know how to handle this anymore."* Participant Two discussed the need for individualised support for menopause to support wellbeing, stating: *"I need someone to know me and my story . . . if I'm given access to people who get to know me and what I've tried and what's failed and how and how I feel like I'm failing and what's important to me, I think that would make a huge amount of difference."* Participant Two then went on to discuss the value of having an

individual focused on supporting them in lessening their burden of coping on their own, sharing: *"... I just want someone to give me some direction and just take that worry off my brain so I don't have to worry about that anymore. I can just focus on the doing."*

Five women expressed wanting to feel supported with menopause in a way which utilised a "natural" or holistic approach. Three participants were interested in a natural approach due to their preference of not taking medications; Participant Twelve expressed that if she could go back, she would not have begun medication and looked into more natural approaches, stating: *"...don't go into tablets that I've gone into... try other things first"*. She then continued to say: *"Because there's so many tablets, I think try more natural ways of doing healing."* Participant Fourteen shared how their family members' experience with medication drew her to a more natural approach, stating:

when you start getting onto medicine, and then you start having to have more and more, and then they... they don't work well together. If you take one, it doesn't work well with another, you never solve the problem. I'd rather not get to that point if I can.

Participant Five spoke of their experience trialling an SSRI for their menopausal symptoms and finding it to not be beneficial:

I kind of just took the first one that evening, and actually didn't like at all how I felt... [1] just didn't really want to continue on with it. So I thought we'll just try and get through this, get through this naturally.

Participants also shared an interest in a holistic or "natural" approach to menopause as it fits their personal preferences for approaching their health. Participant Eleven discussed their preference for a natural approach to support them with menopause, noting: *"I'm very much into doing things naturally. I don't believe in, you know, taking things or suppressing things."* This viewpoint was shared by Participant Twelve, who expressed wanting support in the form of education on natural ways to approach menopause: *"to educate how to handle it more naturally than going through, you know, taking medication"*.

A holistic, lifestyle approach to menopause was identified by two participants as the approach they would like taken to support them with menopause. Participant Seven shared how a holistic approach considering all aspects of health beyond the physical drew them to the coaching programme: “...it seemed to be pretty comprehensive and covering emotional, physical... good old Mason Durie and the four walls kind of thing. They covered everything.” Similarly, Participant Fourteen mentioned this lifestyle approach drew them to seek support from the programme, stating: “It’s about lifestyle and wellness and not about medicine and hormone replacement... I’d rather do it [approach menopause] in a healthy, sustainable way, and [coaching programme] looked more in line with that.”

3.4.2 Midpoint Interview Results

Data analysis revealed four key themes from the midpoint interviews after engagement in the programme: a need for empathetic coaching, barriers to behaviour change, practical tips to enhance lifestyle, and improvement in holistic wellbeing (see table 13).

Table 13
Midpoint Interview Theme Overview

Theme	Sub-theme
Need for empathetic coaching	<i>Validation of experience Special care and attention Tailored to individual needs</i>
Barriers to behaviour change	<i>Busy lifestyle Busy life with children Making time to make change Self-motivation to make change</i>
Practical tips to enhance lifestyle	<i>Small scale change Practical change Tailored to lifestyle</i>
Improvement in holistic wellbeing	<i>Sleep and mental wellbeing interrelated Sleep improving cognitive ability Improvement in overall wellbeing</i>

3.4.2.1 A Need For Empathetic Coaching

Five participants valued the empathetic approach of coaches within the programme, discussing the importance of empathy in their sessions. Participant Nine valued this approach and the way it validated their experience, sharing: “she [the coach] said, it’s what

happens at this stage in life. It's not you. And I really liked that, because not everybody sees it that way." This validation of experience was also valued for Participant Eleven, who discussed how the coach reassured the participant that they are not alone, and many women feel the same way as her: *"And also, I guess, the knowledge that, I mean, I knew this, but that a lot of other people are, you know, going through similar things."*

The emotional support from coaches was valued by Participant Eight, sharing how the impact of an empathetic coach supported their enjoyment of the programme. She said: *"it's probably that special care and attention you get, when you're in my stage of life and all the responsibilities that come with your career and your friends... you don't often get a lot of time to actually get people looking after you and so that's probably what I've really loved the most."* This participant also discussed the impact of connecting with a coach who is attuned to the participant's individual needs, stating: *"actually having somebody there who listens to you who looks after your needs. It's kind of really nurturing, and it feels so nice."* This view of the coach being invested in participant needs was shared by Participant Eleven, who noted: *"it's just actually really nice to talk to someone who's really invested in the process and helping."* Participant Three shared how the ability to talk to someone in depth supported their engagement, noting: *"it's just good to be able to talk to somebody about where I'm at and at depth."*

3.4.2.2 Barriers to Engaging in Behaviour Change

Many participants identified barriers to engaging in the programme to do with their respective lifestyles. Participant Ten noted that the busy week makes it hard to engage, sharing: *"... take into account the fact that people do work and can't and can't do it say, in the afternoon or, you know, whenever or morning . . . I'm so frazzled during the week..."* A busy lifestyle was mentioned by Participant Twelve as a barrier to engagement, stating: *"... sometimes you can't make it at 7:30, sometimes you've got kids screaming..."* Participant Twelve then continued to share the impact of a busy life on trying to implement change related to sleep, sharing: *"I know sleep training that I need to go, I know for a fact that I need to go to sleep before 10 o'clock kind of thing. Sometimes it has been hard, because when the kids go to sleep, that's when you're kind of like trying to get things done at the same time."*

Some participants shared that their own capacity to engage in change was a barrier to behaviour change. Participant Three shared this struggle, noting the requirement for them to take steps to implement changes in their life: *“I think [the advice] is great, but the challenge was just me stopping what I’m doing and making time to do these important little things.”* She then went on to share the difficulty of changing their behaviour, sharing: *“... it’s just very difficult to form a habit, you know, after not doing it for so long.”* Participant Ten spoke of their understanding that they themselves need to make a change, and the time it will take for change to occur: *“... it really is on you, because you can’t wait around for magic to happen or for somebody to ride in on a horse and save you.”*

3.4.2.3 Practical Tips to Enhance Lifestyle

All seven participants identified that the advice provided from coaches was provided with consideration of their lifestyles, preferences, and was at a scale which felt possible for them to integrate into their daily life. More specifically, participants valued the ability to incorporate small changes to their behaviour which could provide a positive benefit without a large time or energy investment when women are already short of these resources. For example, Participant Six spoke of the practical approach to changing diet, sharing:

He [the coach] just sort of looked at what I was eating and said, ‘oh well, that’s, you know, out of kilter. So, try this sort of thing’. It wasn’t too prescriptive, just a few, you know, a few small things. I think, yes. I can do a few small things.

Participant Twelve spoke of the importance of making changes within their lifestyle which they felt able to do, stating: *“It’s not too many changes, but little changes, which is great, because I know if I go directly, if I go too harsh, then I will never do it.”* Participant Eight shared how the lifestyle tips were tailored to work around their lifestyle, particularly to do with sleep:

we could say to you, go and move rooms and stuff like that. But she [the coach] said, that’s kind of your life, you know, actually it’s, taking you away from that situation for a while, but you, I’m assuming, you probably want to go back and sleep in the same room

with your husband and, you know, the cats and all the rest of it, she [the coach] said. So let's look at something else first."

3.4.2.4 Improvement in Holistic Wellbeing

The last theme identified from the midpoint interviews was the holistic impact coaching had on their wellbeing. Participant Six shared how despite not starting sleep training yet, their sleep has already improved: *"but actually, I mean, in a way, doing some of the other things has helped with sleep"*. She then went on to share the changes in her wellbeing since beginning the programme, sharing again the improvement of sleep among other aspects: *"I'm managing to lose some weight... and I think this journaling business has actually helped... I do think I'm sleeping a bit better, even though we haven't done the sleep thing yet."*

Participant Ten noted that engagement in the programme so far has supported them by beginning to address some of their struggles, sharing:

I feel the knot in my stomach sort of reducing, and you know, and so I think overall, it is, it is has made an impact. It is sort of, what's the word, like an inroad into, you know, my issues.

She expanded upon this improvement in wellbeing, sharing their new understanding of how aspects such as sleep and mental wellbeing are connected since engaging in the programme, and the value of the holistic approach:

If you lack sleep, of course, it's all interrelated, I suppose, isn't it? Because if you can't sleep, you don't have enough energy to do all these things. But then also, if your mental wellbeing is bad, then you... can't do all of these things. So it is really integrated, all sort of holistic.

Engagement in the programme supported Participant Eight's wellbeing through focussing on sleep, sharing:

I feel in tricky situations now . . . I can handle. I'm not so vulnerable, or, you know, like I can, kind of, I feel a lot, sort of more quick on problem solving, and probably a lot more just resilient. I feel more resilient is probably now that I'm sleeping better.

She then went on to share how addressing sleep improved her cognitive ability, sharing: *"I just feel so much more on onto it like I, you know, have no problems articulating how I, you know, what are my thoughts are and things like that, whereas before I'd be like, so foggy."*

3.5 Discussion

This study aimed to explore the experiences of peri- and postmenopausal women prior to, and during, engagement with a menopause specific wellness coaching intervention. The study also aimed to understand the landscape for women with menopause in Aotearoa, and identify key components of transdisciplinary wellness coaching delivery which supported women's engagement and enjoyment.

3.5.1 Lack of Knowledge Around Menopause

All women interviewed reported a lack of knowledge about menopause. This lack of knowledge manifested as an inability to identify menopausal symptoms or distinguish between menopause-related symptoms, as well as a lack of understanding of the physiological mechanisms driving menopause and the subsequent impacts these can have on the individual. These findings are consistent with other qualitative studies investigating the lived experience of menopause; women are often unaware of their symptoms being related to menopause (Adelekan-Kamara et al., 2023), and experience a high level of distress as a result of this knowledge deficit (AlSwayied et al., 2024; Wood et al., 2025). The experiences of women from this study, as well as the wider literature on this topic, consistently demonstrate that this lack of menopause knowledge impacts women. Indeed, a lack of health literacy can lead to a lower ability for individuals to self-manage their health and experience poorer outcomes (Coughlin et al., 2021; Lee & La, 2024); it stands to reason women experiencing menopause with a lack of prior knowledge of menopause could be considered to have a low menopause-specific health literacy. Providing education on

menopause which is relevant to the individual, and normalises the physical experience of menopause, as discussed by Hickey et al. (2022), is thought to be an important first step to ensure women are informed as they enter this natural stage of life. This theory of education to support wellbeing is supported by the wider literature; individuals who receive education on their health condition have an increased understanding post-education (Azizi Sani Dopolani et al., 2025; Larsen et al., 2022), and this education has the potential to improve health-promoting behaviours and perceived self-efficacy in those who engage (Hsu et al., 2024; Solhi et al., 2020). However, it is important to note that education alone does not guarantee a subsequent improvement in health, and there is a potential over-reporting of this benefit in the literature according to a meta-analysis conducted by Xue et al., (2021). The current project identified a knowledge gap in the participants related to menopause, and women expressed a deeper understanding of how to manage their symptoms when provided this knowledge. While menopause is not classified as a health condition per se, it is a physiological change which persists until the end of the lifespan, and due to its myriad of symptoms, can reduce QoL if not managed (Davis et al., 2023). Therefore, education on menopause should be prioritised to support women through this stage of life, both prior to and while traversing menopause.

3.5.2 Taboo on Menopause

Some women (n = 3) identified a taboo around the topic of menopause. Women reported a lack of intergenerational support before entering menopause, as well as a general taboo around speaking of women's health, whether that be with peers or in society as a whole. This taboo is reflective of the shared experience of menopausal women across multiple qualitative studies; women noting that this taboo around menopause was passed down from the generations preceding them (Thomas et al., 2025), and that the taboo was felt to be prevalent in society (Adelekan-Kamara et al., 2023), leading to women feeling less able to speak openly about their experience (Alswayied et al., 2024), or seek support (Adelekan-Kamara et al., 2023). It is likely that this societal stigma around the topic of menopause is reflected in the high prevalence of a lack of knowledge of menopause reflected in this study, and many others (Adelekan-Kamara et al., 2023; Alswayied et al., 2024; Wood et al., 2025), as if a topic is not spoken of, there is minimal capacity to learn or engage with said topic.

These findings speak to a wider issue: a taboo or stigma around a health condition is described by the World Health Organisation as a “hidden burden of disease”, reducing social support, hindering medical treatments, and increasing the experience of shame for an individual (Hossein et al., 2023). In essence, a stigma can decrease quality of life (Tushe, 2025). While most research articles consider the stigma of mental health conditions, it has been shown education and exposure to a condition reduces the stigma around it (Williams et al., 2024; Wong et al., 2024). In fact, the World Health Organisation suggests that the most effective way to reduce a stigma is through social contact; a person with a health condition speaking candidly to a person without, reducing prejudice and improving awareness (Gronholm et al., 2025). Speaking with others who have a similar experience is another way to reduce stigma, with open discussions normalising the experience (Jackson et al., 2012).

The women in this study spoke of an increased awareness of menopause in today’s society, including conversations in the workplace, with peers, and in the media. As discussed above, this open access to information, both between peers and online, is a key to reduce stigma, and support women’s quality of life (Gronholm et al., 2025; Jackson et al., 2012; Williams et al., 2024; Wong et al., 2024). This increased awareness is also represented in the literature; one study finding women are actively opening up about their lived experience of menopause through the tool of social media to reduce the social stigma around discussing women’s health (Thomas et al., 2025). In fact, social media is implied to be a key tool in improving women’s awareness of menopause (Muralikrishna et al., 2025), noting that social media can also be a source of misinformation in this space (Nickel et al., 2025). This improved access to information is a reflection of women pioneering a new era of discussing women’s health openly, and no longer suffering in silence as was done prior. Evidently, as awareness continues to build, a reduction in stigma in communities who can access these discussions should occur.

Overall, while menopause has long been a topic not spoken of, the societal shift in the present day is starting to alleviate this taboo, which likely will have a trickle on effect for women to being more informed on menopause, and become more empowered to manage and speak of this new stage of life.

3.5.3 Menopause Symptoms Impacting Daily Life

This study showed that women often experienced menopause symptoms of a severity which impacted their functioning in daily life. Women experienced disruptions to their physical capabilities, no longer being able to engage in their busy schedules, as well as disruptions to cognitive capacity, being unable to perform work to the standards they used to. Some women also experienced anxiety and feeling overwhelmed which impacted their ability to engage in their life as they used to. This is not surprising; menopausal symptoms are well documented across the literature to impact women's QoL, with significant impacts on the domains of pain, emotional wellbeing, social functioning, and energy and fatigue (Hutchings et al., 2023). Indeed, these symptoms are often reported in the literature to be detrimental to not only the ability to participate in work (Daly & Hynes, 2025), but in daily life as a whole (Arar & Erbil, 2023). These findings support the positioning of menopause symptoms as a barrier to engagement in daily activities for women, and highlight the significant impact of these symptoms. It is clear that menopause symptoms require support for women to be able to function as they did prior to beginning menopause.

3.5.4 Seeking Support for Menopause

Many participants expressed an interest in engaging in external support to help manage their menopausal symptoms. For women in this study, support was imagined under the following three categories: personalised to their needs, non-pharmaceutical, and holistic. While not relevant to menopause, the literature is beginning to demonstrate a need for personalised care in healthcare; people want to be involved in their own care, and have their care tailored to their individual needs (Jandaghian-Bidgoli et al., 2025). This preference of holistic health care is driven by the simple fact that western medical treatments are detailed and precise, and lose sight of the individual being treated (Fau. et al., 2024). Individual wellbeing is contingent on effective treatment inside the context that an individual resides in; a holistic approach to wellbeing (Fau. et al., 2024). To this point, Williams (2024) presented a case for culturally responsive care in relation to treating menopausal women, illustrating the potential benefits for women who are engaging in patient-centred care. In relation to non-pharmaceutical, holistic approaches to menopausal symptom management, women are increasingly reporting an unmet need with current menopausal treatments (DePree et al., 2024; Kingsberg et al., 2024); women often discontinue their prescription medications and

favour lifestyle changes to manage their symptoms (Kingsberg et al., 2024). Functional medicine and holistic approaches to wellbeing put the power back in an individual's hands to control their health, increasing the appeal of these alternative treatments for women (Shrivastava et al., 2024).

Overall, women in this study and in the wider literature have an interest in engaging in treatment options outside of what is currently available for menopause within primary care.

3.5.5 Empathetic Coaching

This study highlights the importance of an empathetic approach to wellness coaching, as it was appreciated by the majority of participants (n = 5). Women felt validated, emotionally supported, and connected with their coach. This empathetic approach supported women's engagement with the content, and incentivised women to continue engaging due to this support. Empathy and its impact in the healthcare setting has been replicated outside of this study: it increases individual satisfaction, comfort, and trust with a health practitioner (Gopi & Taywade, 2024). However, the current healthcare environment promotes an approach of objectifying individuals as their presenting complaint, leading them to feel disconnected and alienated (Guidi & Traversa, 2021). This approach, coupled with the expectations of doctors to conceal emotions (Shapiro, 2011), does not cultivate the empathetic approach that the women in this study enjoyed through this coaching. It is logical that the women valued this aspect of the programme highly, as it is less likely to experience this level of empathy in other healthcare settings.

Empathetic approaches in the health care setting are becoming more widely discussed and implemented, due to its positive impact on improving health outcomes, greater satisfaction, greater adherence, and improved emotional health (Kerasidou et al., 2021). In fact, due to these positive outcomes, empathy training is becoming more common, with healthcare students being taught how to implement interventions which target patient values to allow for behaviour change (Byrne et al., 2024). Despite the importance of empathetic approaches to health care being well presented, practitioners are not completely adopting this way of working, potentially hindering patient care (Moudatsou et al., 2020). These findings, particularly the emphatic expression of participants who benefited greatly from this

empathetic approach, should be considered in the further development of frameworks looking at models of care, and an empathetic approach be utilised for women with menopause.

3.5.6 Barriers to Behaviour Change

Women struggled to engage in the wellness coaching due to barriers such as their busy lifestyles, or their perspective of their capacity to engage in behaviour change. This is consistent with findings from Khademi et al. (2024) in a cohort of postmenopausal women where a perceived inability to engage in behaviour was a main barrier to engagement in lifestyle changes to support menopause. In the general population, it is common that competing priorities and time constraints in an individual's life act as a barrier to adopting lifestyle behaviour change such as diet and exercise (Deslippe et al., 2023). The results from this study are consistent with other research considering barriers to behaviour change, illustrating how these aspects of adopting new lifestyle patterns have a commonality with other people, both menopausal and otherwise.

Self-determination theory (SDT) is a theory to help understand factors promoting human motivation (Ryan & Deci, 2017), and can be applied in this instance. It posits that people require three basic needs to function both individually and in society: competence, relatedness, and autonomy (Fortier et al., 2012). As the women reported, capacity to engage in behaviour change was a key barrier to making changes provided by coaches, likely linked to the competence aspect of the SDT. Specifically, competence considers whether an individual feels capable of achieving the outcome they are after (Patrick & Williams, 2012); in this case, the changes discussed with their menopause wellbeing coach. The transtheoretical model of health behaviour change may also have impacted women's ability to engage in change, particularly the women who shared that they knew how to make the change, they just had to do it. This model considers six stages of change individuals pass through to make a behaviour change: precontemplation, contemplation, preparation, action, maintenance, and termination (Prochaska & Velicer, 1997). Taking note of the contemplation stage, it is likely some women fell into this category, in which there is an intent to change, but the pros and cons of change are being weighed up by the individual (Prochaska & Velicer, 1997). Indeed, those who were provided all the tools for change, but were unsure of whether to

take the next step, likely required further intervention to move them through to the preparation stage to encourage behaviour change (Ferron & Massa, 2013). A further development of the wellness coaching programme could include these behaviour change models to pinpoint aspects where more support is needed, allowing for further engagement in behaviour change and women receiving more benefit from the programme itself.

3.5.7 Practical Tips to Enhance Lifestyle

Women who were provided behaviour change instruction which was in line with their preferences and lifestyle were more able to integrate this into their day-to-day living. Women appreciated that to improve their wellbeing, they did not have to completely change their life, rather simply adopt a slight change. Some examples of changes recommended were small dietary swaps, or the inclusion of a small bout of exercise at home rather than travelling to the gym. This method of behaviour change is consistent with the recommended approach: to plan and make small behavioural steps in line with participant values, allowing for their own self-determination (Matthews et al., 2024). Coaching interventions such as in the present study often employ these approaches to behaviour change, uniquely placing these interventions to be more effective than traditional paternalistic approaches (Matthews et al., 2024). Sustainable behaviour change is consistently proven to be effective when addressing lifestyle changes, as small steps successfully completed by the individual encourage intrinsic motivation development, allowing for further behaviour change to occur and to be more likely sustained in the long term (Berkemeyer & Wehrmann, 2022). Indeed, the development of health-promoting habits over a long period of time are strongly associated with health improvements, particularly habitual behaviours on the daily basis (Gardner et al., 2023). Habits are more easily formed when the individual self-selects it, the habit is easily repeatable, becomes enjoyable, and planning to perform the habit is completed (Singh et al., 2024). The approach of this wellness coaching programme to take aspects of participants' lives and modify them slightly (with participant buy-in) to develop a new behaviour is in line with this method of habit development to support behaviour change and so health-promoting behaviour. This study supports this framework of behaviour change, demonstrating how women with menopause can make effective change through small practical steps within their lifestyle.

3.5.8 Holistic Wellbeing Improvement

Findings showed that women who had only engaged in one or two of the four pillars offered in the programme at the time of their interview sustained positive benefits in not only the area where they engaged in coaching, but also areas in which they had not received specific coaching. Indeed, women who were yet to engage in sleep coaching, for example, found positive benefits through modification of other lifestyle factors such as mental wellbeing. Similarly, women who engaged in sleep sessions found themselves more cognitively active, and increased energy to engage in exercise. This holistic impact of lifestyle changes on wellbeing found in the present study is consistent with the literature; sleep deprivation is proven to detrimentally impact physical and mental health (Shah et al., 2025); engagement in physical activity positively influences mental wellbeing and sleep (Mahindru et al., 2023), and a healthy diet pattern rich in fresh produce and fibre is associated with increased sleep quality and improved mental wellbeing (Hepsomali & Groeger, 2021). Mental wellbeing coaching is commonly associated with an improved psychosocial functioning of an individual, where perceived stress is decreased and QoL is improved (Clark et al., 2014). It is clear from both the literature and the present research findings that lifestyle interventions are beneficial not only in their specific domain, but have additive effects which allow for a general improvement in wellbeing.

3.5.9 Strengths & Limitations

A key strength of this study was the range of women included: women who had just entered perimenopause through to women who were well into postmenopause were included in the study, providing a representative population. This allowed for the impact of the programme to be demonstrated in women who were beginning their menopause journey, and those who were well accustomed to menopause. As benefit was demonstrated in both camps, it is clear this programme does not just benefit those who are new to menopause. The qualitative aspect of the study was another strength as it allowed for more depth to be provided to the findings, allowing for nuance to come through. Lived experience of women traversing menopause is crucial for the understanding of what the pain points are, and how to address them, and this study was able to shed light on this.

While strong, the study is not without its limitations. A main limitation of this study was the time constraints for data collection and analysis to meet the requirements of a 90-credit thesis, meaning data could only be collected up until the midpoint of the intervention. To this end, participant recruitment was also managed by the wellness coaching provider, further impacting the researchers ability to compress the timeline. Due to these constraints outside of the researcher's control, not all participants who completed the baseline interview were interviewed at the midpoint, indicating the midpoint data is not wholly representative of the sample. Considering the sample population, the majority of the participants were located in the North Island of New Zealand, and were mainly from Auckland. This means the population is not representative of the wider New Zealand population including rural New Zealand. Ethnicity data were also not collected, limiting the ability of the study to inform effectiveness of interventions in specific populations. Other limitations included an inability to evaluate if benefits were sustained post-intervention, not having quantitative data to support the qualitative findings, and participants who were already interested in lifestyle approaches volunteering for the programme, potentially biasing the results. Lastly, participants were not screened for menopause-related medication use prior to engagement with the programme, meaning it is unclear whether benefits can be attributed to their medication or the active intervention.

3.6 Conclusion

Overall, women benefited from a transdisciplinary wellness coaching programme to approach menopausal symptoms. Our findings found that women prior to engagement had a limited knowledge of menopause, did not speak of menopause openly, and experienced symptoms which increased their interest in seeking support. This gives an insight into the landscape women who are entering menopause or are menopausal are living within. The findings demonstrated a wellness coaching programme based in empathy, and which considered common barriers to behaviour change, had holistic health benefits beyond the specific lifestyle intervention addressed. As a result, future wellness coaching interventions should be designed utilising the aspects women found effective for engagement, to allow the efficacy of lifestyle interventions such as nutrition, exercise, sleep training, and mental wellbeing to be effective in supporting women's QoL while in menopause. Further research should be conducted over a longer timeframe with a wider sample population to evaluate

the benefits sustained at the end of a programme, and after its conclusion, to evaluate the long-term sustainability of an intervention such as this. To this end, research into this space should also consider including a wider sample of women from different backgrounds, collect quantitative data related to sleep, diet, exercise, wellbeing, and collect more information on medication use to provide a more well-rounded understanding of the benefits of wellness coaching on menopause-related wellbeing.

CHAPTER 4: CONCLUSION

4.1 Achievement of Research Aims and Objectives

The aim of the present study was to investigate the impact of a holistic wellness coaching programme for perimenopausal and postmenopausal women on their experience with menopause, and understand what aspects of the programme were particularly effective. Twelve women who were peri- or postmenopausal were involved in the research study and participated in qualitative semi-structured interviews. To achieve this research aim, two objectives were developed.

The first objective was to evaluate the lived experience of women with menopause prior to engagement with the programme, and their reasons for engaging in the programme. We found that all women experienced a lack of knowledge of menopause which hindered their ability to not only be prepared for, but understand and identify their symptoms. Similarly, women noted that there is a taboo around menopause decreasing their ability to discuss menopause openly. Some women found their menopause symptoms deeply impacted their day-to-day life, being unable to participate as they once did in their activities. Many women were interested in engagement in this programme for its holistic approach towards menopause; many women mentioned finding little efficacy with pharmaceutical interventions, or simply having a preference for doing things more 'naturally'.

The second objective was to evaluate the effectiveness of the programme, considering both the content included and delivery of the programme. The women strongly expressed the empathetic approach of coaches supported their wellbeing journey, some women crediting this being important simply as they felt understood. Similarly, women found that the advice provided by coaches, when provided with consideration to their lifestyle barriers to implementing change, were manageable for them, where in the past large-scale changes had not been sustainable. Interestingly, women who engaged in only some of the pillars experienced holistic wellbeing improvements outside of the areas that they had received coaching in i.e. experiencing sleep benefits after mental wellbeing training, demonstrating the wide-reaching efficacy of the programme outside of the constraints of the individual pillars.

This study demonstrated that wellness coaching, delivered tailored to participant needs and with empathy, can improve holistic wellbeing. These findings are in line with what the literature demonstrates from engagement in wellness coaching. Further, this study also provided insight into the experience of women with menopause prior to engagement, allowing future interventions to be developed with these pain points for women already in mind.

4.2 Research Impact

At this point of time, to the best of the author's knowledge, this pilot study is the first to evaluate the impact of a wellness coaching programme which integrates nutrition, sleep, exercise, and mental wellbeing training to peri- and postmenopausal women in New Zealand. As a result of this, the findings from this study provide a budding comprehension of what makes a wellness coaching intervention effective for women, and the benefits which can be gained from engagement in wellness coaching for this population. Further, as this study has provided information on the social experience of women with menopause in New Zealand, it has presented insight into what menopausal women in New Zealand may be experiencing. Overall, this study's findings strengthen the current literature on wellness coaching for menopause, and provide additional information for improvement upon wellness coaching programmes available.

4.3 Strengths & Limitations

This study had many strengths. Firstly, there was a representation of both perimenopausal and postmenopausal women, allowing for an ability to evaluate the impact of the wellness coaching on the earlier and later stages of menopause. Secondly, due to using qualitative research methods this study was able to provide depth to what aspects of the intervention were effective, rather than just demonstrating that there was an improvement. The last strength of this study is that it captured the nuance of the experience of women with menopause; the interview format allowed for women to share stories about their experience with menopause which would not have been found otherwise.

This study had multiple limitations. A limitation of this study was that due to time constraints for collection and analysis of data for a 90-credit thesis, we were only able to evaluate the impact of the coaching on women at the halfway point of the programme. A key factor impacting the time constraints was the role of the provider in recruiting participants into the programme. As this process relied on the provider, the researchers were unable to control the timeline or speed of recruitment. Due to the structure of the programme allowing flexibility of engagement, women had engaged in different aspects of the programme, so not all pillars administered were evaluated. While positive results were sustained, it would be appropriate to then continue to evaluate participants at the end of the programme. This means the results are not reflective of the impact of a completed holistic wellness coaching programme, and there is no clear data on which pillar women gained the most benefit from engagement with.

Another limitation of the study was the participant pool; the majority of participants were recruited from one region of New Zealand (Auckland). Therefore, the results may not be reflective of the experience of women across New Zealand, nor reflect the wants and needs of women across the country as well. Ethnicity data were not collected for participants, therefore the results cannot be interpreted in relation to ethnicity. Further, not all participants who completed the baseline interviews completed the midpoint interview, therefore the midpoint data is not a reflection of all of the women who participated.

As participants who engaged in the study volunteered, it is likely these women already had an interest in lifestyle approaches to managing menopause. This may then be reflected in an increased bias towards this type of intervention, where women may have found more benefits than those who were not interested in lifestyle approaches.

This study explored only the qualitative experience of women with menopause; while the findings demonstrate positive experiences with engagement in the programme, there is no quantitative data to support the change in symptoms experience from engagement in the programme. Therefore, this is only a subjective representation of improvement, rather than objective using questionnaire data.

Lastly, women engaged in the programme were not excluded based on taking medications for menopause. As some women expressed during interviews they were taking medication for managing symptoms, it cannot be noted for sure if the subjective holistic wellbeing improvement is wholly attributed to engagement in the wellness programme, or to the medication.

4.4 Future Recommendations

The population of menopausal women is increasing exponentially, therefore the research into development and implementation of programmes to support women in this stage of life should be a priority. Both quantitative and qualitative research into the benefits of lifestyle approaches delivered as a holistic intervention should be carried out to definitively confirm the benefits of these approaches, as well as stay in tune with what women engaged in these interventions want to see from them. Future research into this space could consider the following to build upon the current research:

1. Follow up participants at a minimum of 3 months after the programme's conclusion to evaluate sustained benefits of engagement in programme, and understand if the programme has the potential to deliver long-term benefits
2. Evaluate participants immediately following the programme
3. Conduct quantitative analysis alongside the qualitative piece to present a well-rounded understanding of the benefits of engagement, using standardised questionnaires to evaluate wellbeing and QoL of women.
4. Increase the sample size and focus on including a wider range of women across multiple ethnicities to have a more representative sample of the NZ population.
5. Collect information on other medications/supplements participants may be taking to evaluate whether benefits of wellness coaching can be seen while concurrently taking other treatments to support menopause.

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APPENDIX

APPENDIX A – PIS and Consent Form



Expert Online Coaching to Support Women Through the Menopause Transition

PARTICIPANT INFORMATION SHEET

Researcher Introduction

We are researchers from Massey University with expertise in sport and exercise, nutrition, and clinical psychology.

Invitation to Participate in Research Study

The *Wellbeing Through Menopause Programme*, facilitated by Imago Wellness Coaching, is a programme designed to support women going through the menopausal transition. This 16-week online programme will do this through the provision of expert advice from coaches in the following four pillars of health: mental wellness, exercise, nutrition, and sleep. Please liaise with Imago Wellness Coaching staff on the delivery of the programme.

As this is a novel programme, we are looking for participants to take part in providing an evaluation on the effectiveness of the menopause wellbeing coaching. Therefore, we would like to invite you to take part in this research study to shed light on your experiences, and whether this has been a beneficial programme for you.

This Participant Information Sheet will help you decide if you'd like to take part in the study. It sets out why we are conducting the study, what your participation requires, and what happens after the conclusion of the study.

Participant Recruitment

We are collecting data from women enrolled in the *Wellbeing Through Menopause Programme* who are willing to participate in this independent research study. We will be conducting interviews and providing questionnaires to collect data from willing participants who can provide their confidential personal experiences of going through the programme and experience of menopausal symptoms throughout the programme. To agree to participate in this research please respond to the researcher with and attach the signed consent form.

Project Procedures and Participant Involvement

As someone who is enrolled in the *Wellbeing Through Menopause Programme*, we would like to invite you to provide your input on how you are finding the programme as you go through it. If you agree to take part, you will be allocated to one of two cohorts.

If you are allocated to the *first cohort* you will be asked to participate in three interviews: one before starting the programme, one halfway through the programme, and one upon completion of the programme. Each interview will take 30-45 minutes, and you



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will be asked to discuss, confidentially, your experience of menopause, your wellbeing, and the benefits and critiques of the programme. The interviews will be conducted online via Zoom, and timings of interviews will be agreed upon between the researcher and yourself. The interviews will be audio recorded and later transcribed, before data analysis. Confidentiality for participants will be maintained throughout the process, however interviews will be labelled so that the researchers can match subsequent interviews. Upon completion of each interview you will be provided information for helplines to contact if the conversation brought up any difficult emotions.

You will also be asked to fill out four questionnaires the week of and prior to your scheduled interview looking at nutrition habits, sleep quality, menopausal symptoms and general wellbeing (will take approx 30 minutes). You will also be invited to fill out a WHO-5 wellbeing questionnaire after each coaching session to track your wellbeing throughout the programme. Data will be de-identified, however labelled to match your questionnaire data over different time points. Data will be analysed using quantitative and qualitative methods – but only de-identified data will be reported.

If you are allocated to the *second cohort*, you will be provided a pamphlet on menopause and managing symptoms while the *first cohort* goes through the programme. We will ask you to also take the same questionnaires as described above for the *first cohort*, but you will not be going through the programme yet. We would also invite you to participate in an interview at the same time as the participants in the *first cohort* to understand your experience living with menopause thus far. Once the *first cohort* has completed the programme, you will then be invited to participate in the wellness coaching programme. We will invite you to complete the questionnaires and interviews halfway through and at the end of the programme so that we can also understand your experiences of undertaking the wellness coaching programme.

Once the *second cohort* has finished the programme, we would like to invite those who were enrolled in the *first cohort* to complete the questionnaires once more, and complete one more interview to assess how you found the last 16 weeks without the programme, to understand how life has been and whether you feel as if there is a need for more support.

As a token of our appreciation we would like to offer a koha (gift) of \$100 for taking part in in the pre- and post-programme surveys and a further \$100 for participating in pre- and post-programme interviews.

Participant Rights

You are under no obligation to accept this invitation. You do not have to take part, and if you choose not to participate in the research, it won't affect your care from the wellness coaching programme. Should you choose to participate, you have the right to:

- decline to answer any particular question
- withdraw from the study at any time, even if you have signed a consent form
(please note if you choose to withdraw two weeks after all data collection for



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the research has been completed, your data cannot be withdrawn from the analysis)

- ask any questions about the study during your time participating
- be given access to a summary of the project findings upon completion of the project.

Confidentiality

All data collected will be used solely for evaluation and research purposes. De-identified reports of results will be provided to Imago Wellness Coaching, and may be presented at conferences and submitted for publication in journals. All personal information will be kept confidential by assigning numbers to each participant. No names will be visible on any papers on which you provide information. All data/information will be dealt with confidentiality and will be stored in a secure location for five years on the Massey University Albany Campus. After this time, it will be disposed of by an appropriate staff member from the College of Health.

Project Contacts

If you have any questions regarding this study, please don't hesitate to contact the following people:

Principal Researchers

Dr Kirsty Furness (School of Psychology, Massey University)

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Committee Approval Statement

- *“This project has been reviewed and approved by the Massey University Human Ethics ~~Ohu Matatika 1~~, Application OMI 24/55. If you have any concerns about the conduct of this research, please contact the Chairperson, Massey University Human Ethics ~~Ohu Matatika 1~~, email humanethics1@massey.ac.nz.”*



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***Expert Online Coaching to Support Women Through the
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CONSENT FORM

I have read the Participant Information Sheet. I understand the information and have had the opportunity to ask questions. **I understand that the data collected will be held for a minimum period of five years**

I understand that my participation is voluntary and that I am free to withdraw from the study up until 2 weeks after data collection concludes without giving a reason and that this will not impact on my engagement in the programme.

Signature: _____ Date _____

Full Name (printed) _____

Phone Number _____ Date of Birth _____

Are you willing to be contacted regarding future research projects within the School of Sport, Exercise and Nutrition? Your name and email address will be saved in a secure location. You will be sent periodic newsletters regarding research studies within the School. You can opt out of this newsletter at any time.

Tick here if you accept.

APPENDIX B – Interview Schedules

Menopause & Wellbeing Study

Interview Schedule One – Baseline Interviews

10 participants enrolled in Imago Wellness Coaching Programme “Wellbeing Through Menopause”

Introduction – Whakawhanaungatanga

- Thank participant for their time and agreeing to participate
- Introduce self – background and where you’re from
- Respond to participants own introduction
- Answer questions about yourself
- Gain consent to begin the interview

Menopause Study Introduction

- Explain aims of research and the interview
- Verbally go through PIS, and answer any questions
- Get signature of consent form, provide koha to participant
- Gain consent to begin to audio record the interview

Could you please tell me about when you found out you were beginning/had menopause?

- Who diagnosed them (GP, nurse)
- When diagnosis was (how long ago)
- Was this a purposeful visit to diagnose menopause, or incidental?

- What was their knowledge of menopause before diagnosis? Had they heard about it before?

Could you please tell me about your experience managing menopause since being diagnosed?

- What strategies help them effectively manage menopausal symptoms?
- What is difficult about managing menopausal symptoms?
- Do you feel equipped to manage your menopausal symptoms? Why/why not?

Have you accessed any wellness coaching for managing menopause prior to now?

- If yes, where from and how did they find it?
- If not, what made them interested in this programme?

What do you think is the most important thing for being able to self-manage menopausal symptoms effectively? Have you been appropriately equipped for [this important thing]?

Is there anything else you would like to add or bring up that you think should have been discussed?

Closing of Interview

- Do you have any further questions?
- Thank for time and participation

Interview Schedule Two – 8 Week Interviews

10 participants enrolled in Imago Wellness Coaching Programme “Wellbeing Through Menopause”

Introduction – Whakawhanaungatanga

- Thank participant for their time and agreeing to participate
- General chatter to build relationship upon first interview
- Gain consent to begin the interview

Menopause Study Introduction

- Reiterate aims of research and the interview
- Verbally go through PIS, and answer any questions
- Get signature of consent form, provide koha to participant
- Gain consent to begin to audio record the interview

Could you please tell me what has been working well so far in this programme?

- Any changes to participant wellbeing?
- Specific aspects of coaching which are most effective?

- Specific pillar/s which are effective for participant? Sleep/nutrition/mental wellbeing/exercise?
- Specific aspects of platform use/communication/delivery which are useful?

Could you please tell me what hasn't been working well so far in this programme?

- Any change to participant wellbeing?
- Specific aspects of coaching which are less effective?
- Specific pillar/s which are less effective for participant? Sleep/nutrition/mental wellbeing/exercise?
- Specific aspects of platform use/communication/delivery which are less effective?

Could you please tell me, at this point in time, what changes would you like to see in the programme so far?

- Aspects of coaching
- Education around pillars of health
- Aspects around the platform, communication
- Anything else?

At this point in time, do you feel more equipped to self-manage menopausal symptoms?

- Aspects of the programme which have made self-management easier or harder?
- Most helpful pieces of information from the programme?
- Anything you would have liked to know earlier in the programme?

Is there anything else you would like to add or bring up that you think should have been discussed?

Closing of Interview

- Do you have any further questions?
- Thank for time and participation