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HEALTHCARE DURING PERIMENOPAUSAL PERIOD

RESEARCH PAPER

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ABSTRACT

Background: Perimenopause is a phase of complex biopsychosocial transitions that requires multifaceted and holistic treatment approaches. This literature review analyzes current healthcare[1] provision and the potential impact of alternative, non-hormonal, lifestyle-based interventions for symptom management and points out gaps in current state of research.

Methods: A comprehensive literature search was conducted in PubMed and ScienceDirect to find studies published between 2015 and 2025. The search strategy combined keywords related to "perimenopause" or 'menopausal transition' with terms such as "health care", "gynecologist", "general practitioner", "family doctor", "education", "information", "barriers", "quality of life", "mental health", "depression", "exercise", "acupuncture", "nutrition", and "diet." The inclusion criteria focused on original studies, systematic reviews, and meta-analyses, as well as a female population between the ages of 40 and 60. Exclusion criteria included peer-reviewed articles, case reports, and studies that were not available in English. The data from the selected sources was organized thematically to identify and highlight important findings, trends, and research gaps.

Results: This literature review states that perimenopausal healthcare access and management varies across different countries, ethnic groups and is often fragmented, which leads to inconsistent patient experiences. The current data demonstrates the potential of non-hormonal and complementary strategies, such as exercise, nutrition, mind-body methods, and acupuncture, for managing perimenopausal symptoms. But existing studies are often limited by significant heterogeneity, small sample sizes, limited diversity, and short follow-up periods.

Conclusions: Healthcare providers play an essential role in perimenopausal healthcare, but there is a need for enhanced education to address the fragmented care many women receive. Lifestyle interventions are effective and cost-efficient, yet mental health is an often-overlooked aspect and requires further research. Significant research gaps highlight the need for larger and more diverse studies to create an integrated, evidence-based model of care.

Keywords: Perimenopause, healthcare, lifestyle interventions, complementary and alternative medicine (English); Perimenopauze, veselības aprūpe, dzīvesveida izmaiņas, komplementārā un alternatīvā medicīna (Latvian)

[1] General healthcare means that people have access to all necessary, appropriate, and high-quality healthcare services when and where they need them. This includes a range of medical services throughout all stages of life from health promotion and prevention to treatment and rehabilitation to palliative care at the end of life [43].

1. LIST OF TERMS AND ABBREVIATIONS

BDNF	Brain-derived neurotrophic factor
BMD	Bone Mineral Density
BMI	Body Mass Index
CAM	Complementary and Alternative Medicine
CGAs	Chlorogenic Acids
CVD	Cardiovascular disease
DHEAS	Dehydroepiandrosterone sulfate
EMAS	European Menopause and Andropause Society
FSFI	Female Sexual Function Index
GABA	Gamma-aminobutyric acid
GP	General practitioner
HAMD	Hamilton Depression Rating Scale
HDL-C	High-density lipoprotein cholesterol
HRQOL	Health-Related Quality of Life
HRT	Hormone Replacement Therapy
HT	Hormone therapy
ISI	Insomnia Severity Index
KI	Blatt-Kupperman Index
LDL-C	Low-density lipoprotein cholesterol
MBSR	Mindfulness-Based Stress Reduction
MD	Mediterranean Diet
MENQOL	Menopause-Specific Quality of Life
MHT	Menopausal Hormone Therapy
MSP	Musculoskeletal Pain
NG23	NICE guideline NG23 — §3.5.
NICE	National Institute for Health and Care Excellence
Non-HDL-C	Non-high density lipoprotein cholesterol
PFMT	Pelvic Floor Muscle Training
PMD	Perimenopausal depression
PMI	Perimenopausal insomnia
PSQI	Pittsburgh Sleep Quality Index
RCT	Randomized Controlled Trial

QoL	Quality of Life
RT	Resistance training
TLM	Therapeutic Lifestyle Modifications
UK	United Kingdom
WHO	World Health Organization

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2. INTRODUCTION

2.1. Definition of Perimenopause

Menopause is defined as the permanent cessation of menstruation due to the loss of ovarian follicular function and a decline in estrogen levels. The World Health Organization (WHO) defines natural menopause as the absence of menstruation for a period of 12 consecutive months without other physiological or pathological causes. As a normal biological aging process, menopause typically occurs between the ages of 45 and 55. Menopause can also be triggered by surgical removal of the ovaries, chemotherapy, or radiation therapy. Premature menopause is described as occurring before the age of 40 and is most often due to chromosomal abnormalities, autoimmune diseases, or unknown causes.

Perimenopause is the transitional phase preceding menopause, lasting from the onset of menopausal symptoms until menopause and ending one year after the last menstrual period. The WHO therefore expressly emphasizes the need for holistic health care and social support during this phase of transition.

Perimenopause can last several years and cause symptoms such as menstrual irregularities, hot flashes, night sweats, sleep disturbances, mood swings, and urogenital discomfort. This transition process affects physical, mental, and social well-being and requires easily accessible health information and services [13].

2.2. Significance and Topicality of the research

This literature review assesses the current situation in the healthcare sector for women in perimenopause and examines how medical, psychological and lifestyle interventions influence the womens overall health and well-being. As a transitional phase, perimenopause can present significant physical, psychological, and social challenges, underscoring the growing importance of a holistic and individualized approach to women's health. Due to increasing life expectancy, women today spend up to a third or more of their lives in peri- and postmenopause, which highlights the growing importance of understanding and managing the health challenges associated with this phase [3,13].

The World Health Organization stated that in 2021, approximately 26% of all women worldwide were 50 years of age or older, an increase of 4% in the last ten years alone [13]. By 2030, up to 1.2 billion women worldwide are expected to be postmenopausal, which is why greater awareness and optimal treatment of women's physical and mental health during this phase of transition is of increasing importance [9].

Additionally, current healthcare systems are not always adequately equipped to meet these complex needs of women on an individual basis. Medical knowledge and confidence among doctors in dealing with menopausal symptoms vary greatly, which can lead to difficulties in treating symptoms and providing the needed support to women [1,14,34,39,42].

Furthermore, a study by Marlatt et al. (2018) showed that up to 65% of women feel unprepared for perimenopause and highlighted that a significant proportion of women experience unmet health-related needs during menopause, indicating a gap in adequate preparation and support [1]. In order to minimize the physical, social, and psychological problems of women during perimenopause, it is important to close these gaps through targeted education, lifestyle changes, and individualized health strategies.

3. RESEARCH OBJECTIVES

3.1. Aim of the research

This study aims to analyze the role of healthcare providers in supporting the health and well-being of women in perimenopause. Perimenopause is a critical transitional phase that is not only characterized by physiological changes but also has fundamental effects on emotional stability, mental health, social relationships, and overall quality of life. For this reason, this literature review seeks to examine the diverse aspects and effects of the symptoms experienced by women in perimenopause. At the same time, special focus is on how medical, psychological, and lifestyle interventions can contribute to more effective, holistic care and fewer symptoms in perimenopause.

To achieve this goal, the study examines several topics. First, the effects of **perimenopause on physical and mental health**, as well as its impact on quality of life and sexual health, are analyzed to paint a comprehensive picture of the challenges women face during this phase of life. Second, the study examines **the influence of lifestyle factors**—such as diet, physical activity, and alternative, complementary therapies—on the severity and treatment of symptoms during menopause. Thirdly, it examines the role of **GPs and gynecologists**, particularly their involvement in counseling, diagnosis, treatment, and coordination of care for women during perimenopause.

Going beyond conventional approaches, this literature review also examines the growing interest in complementary and alternative, non-hormonal treatment options such as acupuncture, qigong, yoga, and mindfulness-based therapies to assess their potential value for symptom management and overall well-being. Furthermore, this literature review aimes to provide an overview of comprehensive approaches to healthcare for perimenopausal women in high-income countries. But apart from the british NICE Guidelines, the WHO website, and recommendations from EMAS and the NHS, no recent studies were found. This suggests a significant research gap in the area of comprehensive management approaches for perimenopausal women in high-income countries.

Finally, based on these findings, gaps in the current treatment of perimenopausal symptoms are identified with the aim of promoting a more holistic and individualized model of care for women in perimenopause.

3.2. Main hypothesis

Comprehensive healthcare, including lifestyle management and mental health support, can significantly enhance the quality of life for women during the perimenopausal period.

3.3. Research problem

Despite growing recognition of perimenopause as a critical phase for women's health, healthcare remains inconsistent, fragmented, and often focused on treating acute symptoms rather than providing holistic, individualized care [1,5,13,14,34]. Clinical studies and systematic reviews show that many women have unmet needs during this time, including insufficient advice on preventive measures, lifestyle changes, psychological support, education, and alternative or complementary therapies [1,7,14,34].

Furthermore, the training and constant education of gynecologists and other healthcare providers regarding non-hormonal or additional complementary treatment options and the role of lifestyle factors—such as nutrition, physical activity, and stress management therapies—is limited [1,5,14,34].

Current clinical guidelines, including the british NICE guidelines, contain general recommendations for managing menopause pharmacologically, but do not provide further guidance on individual or complementary therapies, creating a gap in the holistic care of women in perimenopause [5]. Despite the recommendations in guidelines, there are gaps in the knowledge regarding the actual health habits and experiences of women in perimenopause. Although there are many scientific studies and findings, this data is mostly limited or restricted to a specific form of therapy (e.g., hormone replacement therapy, alternative therapy) and not about general health care [1].

This fragmented approach of treatment and lack of recommendations underlines the urgent need for further research that combines findings on multidimensional interventions—medical, lifestyle-related, and alternative approaches—to support healthcare providers in providing holistic, individualized, and evidence-based care during perimenopause.

4. RESEARCH METHODOLOGY

4.1. Literature Research

This study is a thematic literature review that aims to find, analyse, and summarise existing research that's relevant to the healthcare of women going through perimenopause. A structured search strategy was used to gather scientific knowledge from peer-reviewed publications, clinical guidelines, and other relevant sources. The studies found were then grouped thematically, read and reviewed, with particular attention paid to recurring themes and core areas such as mental health, the role of gynaecologists, the impact of lifestyle factors (e.g. exercise and nutrition) and the use of complementary or alternative, non-hormonal approaches. This thematic structure provides a coherent framework for discussing how different aspects of care interact and shape women's experiences during perimenopause and highlights potential areas for improvement and gaps in the current treatment of perimenopausal women.

4.2. Inclusion and exclusion criteria

Inclusion criteria:

- **Years:** Studies published primarily within the last 10 years (2015–2025), with an extension up to 15 years where particularly relevant work was identified.
- **Type of publications:** Peer-reviewed journal articles, systematic reviews, meta-analyses, and clinical guidelines.
- **Population:** Women aged approximately 40–60 years, including those experiencing natural perimenopause as well as women with medically induced menopause.

Exclusion criteria

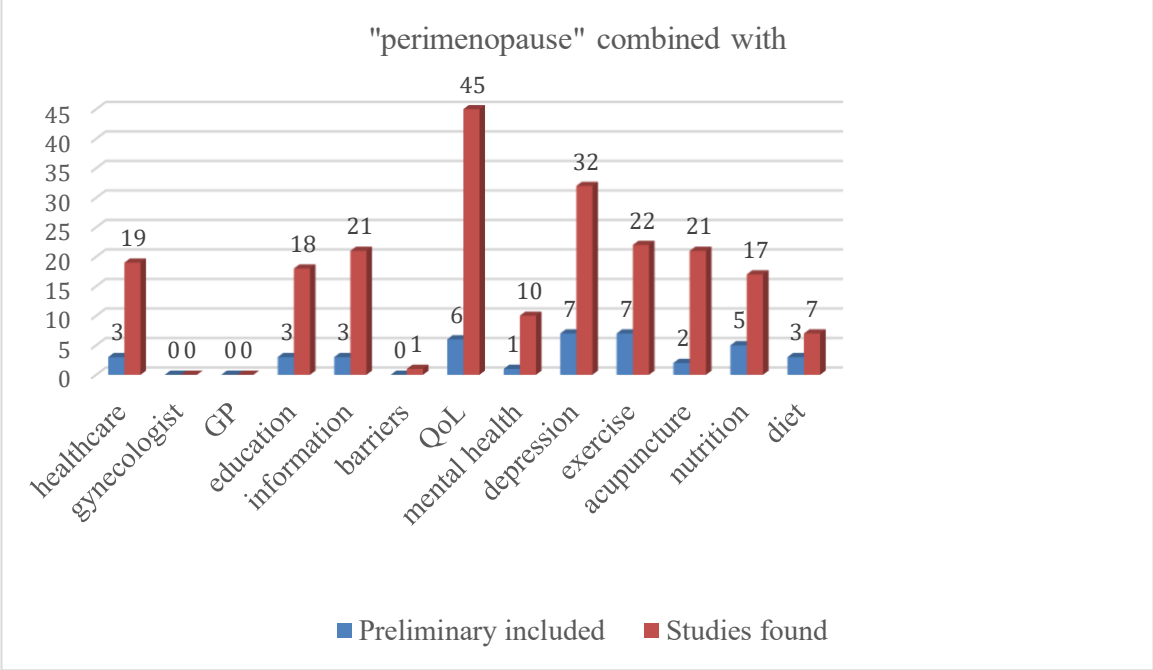
- **Years:** Studies published outside the defined time span.
- **Type of publications:** Blogs, magazins, case studies/series, low evidence sources.
- **Population:** Studies focusing only on postmenopausal women or premature menopause, studies on women with severe comorbidities (e.g., cancer, major chronic diseases) that don’t reflect the general perimenopausal population.

4.3. Data collection

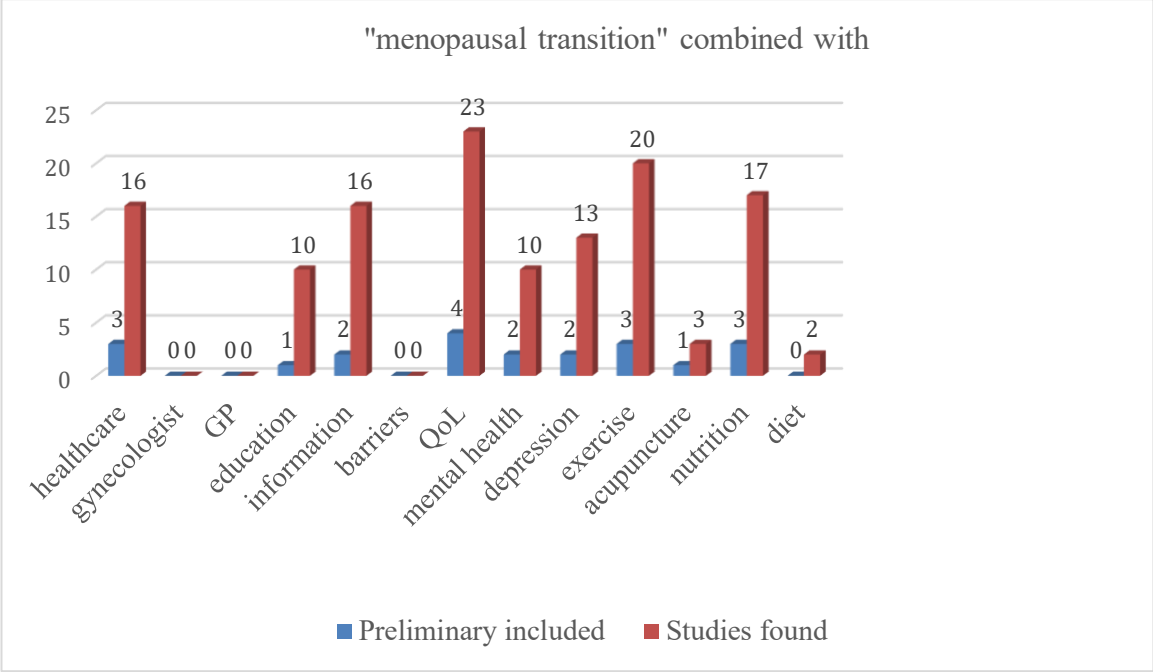
The preliminary literature search was conducted primarily through PubMed and ScienceDirect, supplemented by official databases and resources such as the World Health Organization (WHO) and National Institute for Health and Care Excellence (NICE) guidelines from the UK. Search terms were combined using Boolean operators seen in *Graph 1* and *Graph 2* below to ensure comprehensive coverage of relevant topics. Keywords and phrases included:

- *"perimenopause"* OR *"menopausal transition"*
- combined with terms such as *"healthcare", "gynecologist", "general practicioner", "GP", "education", "information", "barriers", "quality of life", "mental health", "depression", "exercise", "acupuncture", "nutrition" and "diet".*

Filters were applied to restrict results to literature that met the predefined inclusion criteria, ensuring that only studies of appropriate type, population, and timeframe were considered.



Graph 1: **Search strategy results for "perimenopause" combinations by Boolean combinations**



Graph 2: **Search strategy results for "menopausal transition" by Boolean combinations**

4.4. Screening and selection of studies

A wide range of search terms was used, but many of the studies found, overlapped or are repeated in the databases used. The initial, preliminary source search thus yielded 47 sources. These 47 sources are presented in a in the appendix (Appendix 2, Table 2: Summary of identified studies, p. 37- 44) and checked for relevance and inclusion criteria. After a further selection round, 6 studies were excluded for one or more of the following reasons:

- the focus was on postmenopausal women
- the exact phase of menopause was not specified
- the age group did not match the inclusion criteria
- the test group was very small or highly specific (e.g., only conducted on an indigenous population group)
- test subjects with comorbidities were included (e.g., cancer, cardiovascular pre-existing conditions, etc.)

As a result, only 41 sources were analyzed in detail. These were further narrowed down during the writing process, as 9 additional studies were excluded due to significant overlap in content or insufficient relevance to the aim of the literature review. Ultimately, 32 studies were used.

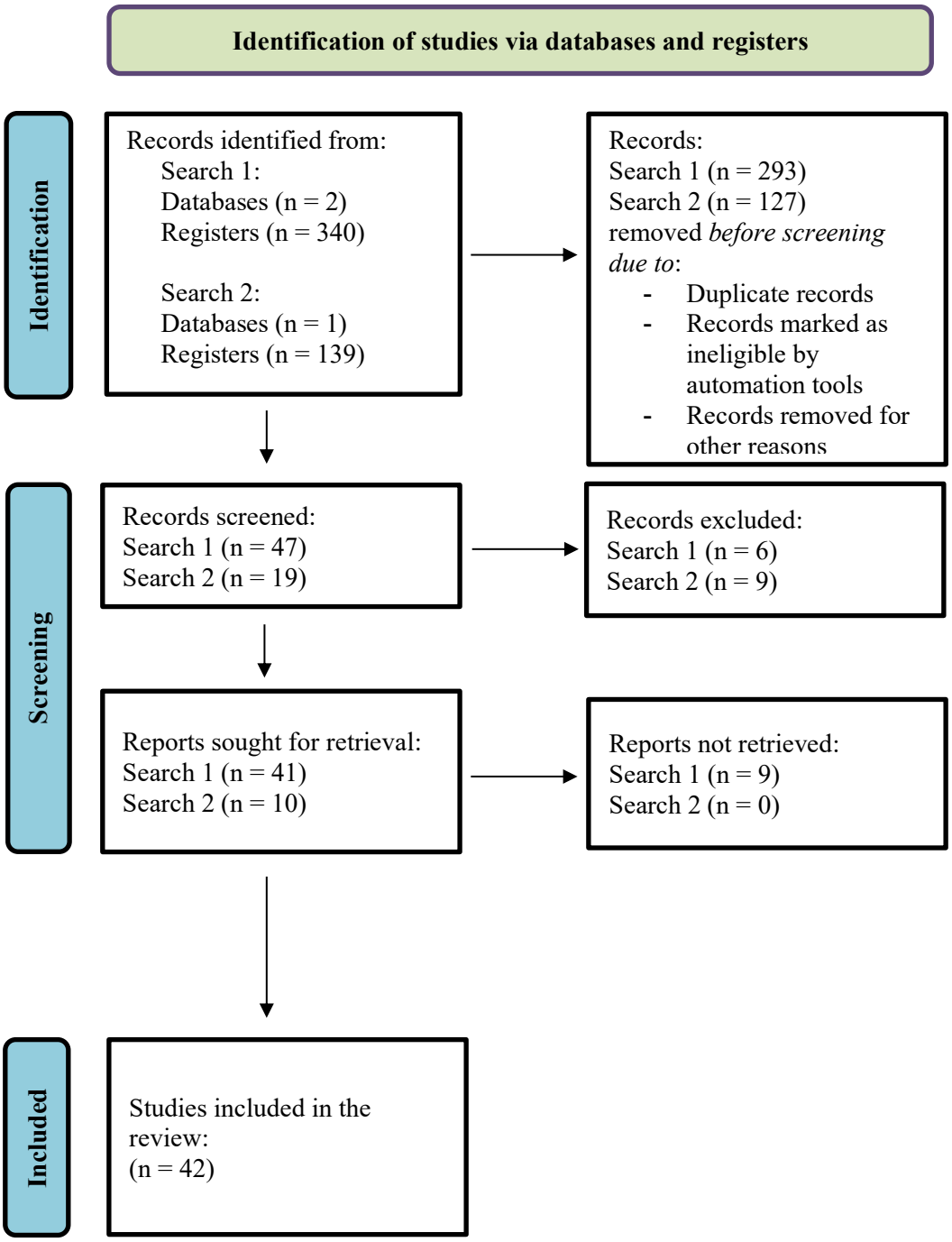
4.5. Additional targeted searches

During the writing process, gaps in the evidence base were identified. To fill these gaps, further research (Search 2) was conducted using the following keywords in the PubMed database:

- *„perimenopause“* AND *„provider“*
    - 26 results of which 3 were already included
    - no new relevant studies were added
- *“perimenopause”* AND *“access”*
    - 7 results
    - 2 new relevant study were included
- *“menopause”* AND *“management”*
    - 106 results of which 3 were already included, 1 study was already excluded
    - 8 new relevant study were included

A total of 10 additional studies were included. This additional research was conducted to ensure a balanced literature review with a comprehensive overview of the topic of “Healthcare during perimenopause” and to also cover areas of access to care and management approaches.

Figure 1: **Flowchart of search and selection process**



4.6. Use of supportive tools

In this literature review, artificial intelligence tools were used to create an outline, organize and subdivide topics, develop a timeline, analyze methodological areas in some studies where clarification was needed, help creating tables and charts and sometimes for translation purposes.

5. RESULTS

5.1. Health challenges during perimenopause

Perimenopause is a critical phase of transition, and women face many different challenges which include metabolic disorders, weight gain, visceral and subcutaneous obesity, impaired glucose tolerance, and high blood pressure, which can negatively impact the overall QoL and contribute to an increased long-term risk of cardiovascular disease and osteoporosis [1,3].
On average, women suffer from 10.7 menopausal symptoms, and 61% of all affected women seek medical help from family doctors (90.4%) and gynecologists (13.7%) [36]. The main reason for seeking medical help are vasomotor symptoms, particularly hot flashes and night sweats, which prompted 31.3% of women to see a doctor [35,36].
Although incontinence problems occur in about one-third of women during menopause, only 8.1% of women seek medical help, according to Huang et al., 2023, incontince is therefore the symptom that leads to the least use of medical assistance [35].
Oral hormone replacement therapy was the most commonly prescribed treatment (68.8%), followed by transdermal hormone replacement therapy (32%). Topical estrogen, on the other hand, was prescribed to only 17.2% of women, and 19% received antidepressants for mental health related menopausal symptoms [36].
This pattern shows that healthcare professionals play an important role in treating the most distressing symptoms, while also highlighting opportunities to expand support for less frequently addressed issues.

Although hormone replacement therapy (HRT) has been shown in current studies to be the most effective treatment for vasomotor symptoms, many women are reluctant to start HRT because they are concerned about side effects [3]. The british NICE guidelines therefore recommend a patient-centered approach, emphasizing HRT as the most effective treatment for vasomotor symptoms while highlighting the importance of individual, continuous monitoring of side effects and individual adjustment of treatment to the course of symptoms [5].
Despite the theoretical availability of treatments and interventions, many women face significant barriers to accessing healthcare for menopausal symptoms. Studies show that many women do not feel prepared for menopause and often have not received adequate health education or

preventive counseling, even though they show great interest in structured lifestyle programs. There is a particularly strong interest in lifestyle programs that focus on weight loss, physical activity, and peer support [1].

A study conducted in the United Kingdom showed that almost half of the women do not seek help from their family doctor during menopause, 36% of women said they feel uncomfortable talking to healthcare professionals about menopause, and 91% said they do not have sufficient information about the menopause [34].

Even among women who seek help, the study found that 30% experienced delays in diagnosis, and only 40% are offered hormone replacement therapy despite recommendations in the guidelines. Furthermore, many women report dismissive attitudes from healthcare professionals, poor treatment organization, and a lack of integration of psychological support, as only 7.9% of women surveyed had undergone a psychological assessment [36]. These experiences have damaged trust and reduced women's willingness to seek care from healthcare providers again, resulting in high numbers of unmet needs in menopause care. When women feel rejected, ashamed to talk about their symptoms, or inadequately advised, this often leads to them not seeking appropriate treatment. Thavabalan et al., also Barber et al. conclude that these interpersonal barriers, combined with systemic problems, creates an environment where safe and effective diagnosis, counseling, and treatment of perimenopausal symptoms is often hindered. These barriers, combined with severe symptoms that cause 10% of women to leave their jobs, highlights the significant personal and societal impact **of inadequate healthcare provision** during perimenopause [14,34].

Multiple studies state, that women from ethnic minorities (e.g. South Asian or Black African women living abroad) face additional barriers, including stigmatization, language barriers, limited culturally appropriate resources, and difficulties in communicating their symptoms, which often leads to multiple consultations and reduced trust in doctors [8,14,37].

According to general practitioners and gynecologists, women who successfully seeked help for menopausal symptoms were more likely to be white, well-educated, and middle-class, while women from ethnic minority backgrounds or lower socioeconomic groups were less likely to have access to support [14].

In summary, the current study situation shows that the healthcare system faces significant challenges in various areas during perimenopause, including the treatment of symptoms,

knowledge gaps among patients and doctors and an insufficient supply of structured, holistic care.

5.2. Physical Symptoms in Perimenopausal Women

One of the most troubling complaints among women going through menopause is musculoskeletal pain (MSP). A systematic review and meta-analysis found that MSP affects over 50% of middle-aged women, with prevalence among menopausal women reaching as high as 71%. The likelihood of developing MSP increases significantly from premenopause to perimenopause, but the transition to postmenopause in particular is associated with an increasing prevalence of moderate and severe pain. MSP is not only associated with physical limitations, it can also lead to negative moods and psychological distress [6].

Urogenital syndrome also states a significant physical problem. A systematic review found a prevalence of 31.9% in perimenopausal women, compared to 19.2% in premenopausal women and 55.1% in postmenopausal women. Symptoms associated with urogenital syndrome can severely impair sexual function, intimate relationships, and overall well-being, including women's quality of life. These physical complaints often persist if they are not recognized and treated, highlighting the need for early examination during perimenopause.

Another frequently named problem in the perimenopausal phase are vasomotor problems, especially hot flashes and night sweats. These symptoms were reported by 39.5% of women in perimenopause, which is an increase compared to women before menopause (34.6%) but still lower than women after menopause (52.6%) [7]. Vasomotor symptoms are not only distressing, but according to a study by Kim et al. (2018), they are also closely related to sleep disturbances and poor sleep quality. This study showed that vasomotor and physical symptoms are strongly associated with sleep disturbances. Sleep disorders, in turn, can have long-term effects on obesity, cardiovascular diseases, diabetes, depression, and overall mortality. Nearly 40% of women aged 40 to 55 report sleep disorders, with prevalence varying by ethnicity. White women are often more affected than women of Asian descent. Poor sleep quality has been shown to exacerbate somatic complaints during menopause, thereby reducing overall quality of life. This correlation contributes to a vicious cycle of exhaustion, reduced performance, and psychological stress. Sleep disorders during perimenopause are often multifactorial and are influenced by hormonal fluctuations, vasomotor disorders, mood disorders, comorbidities, and lifestyle factors.

Severe obesity, for example, is associated with poorer sleep quality, which can further exacerbate symptoms and health risks in women during perimenopause.
It is important to note that hormone replacement therapy has been shown to improve sleep quality by modulating estrogen pathways in the central nervous system. This suggests that treating vasomotor and physical symptoms with HRT can relieve sleep disturbances and improve quality of life [8].
Overall, studies show that physical symptoms are very common during perimenopause, have a major impact, are closely related and interact with each other. These interactions can severely impair the physical functioning, sexual health, emotional well-being, and occupational performance of affected women. In severe cases, these symptoms lead to profound changes in personal life, ranging from absenteeism or job abandonment to withdrawal from social and intimate relationships [14]. While the severity and frequency of symptoms vary depending on the phase of menopause, ethnicity, and social status, women in perimenopause seem to be particularly susceptible to physical symptoms thus represent a major health burden [8,14].

Early recognition of the above mentioned symptoms is crucial for timely diagnosis and treatment in order to minimize the negative impact of the symptoms on women's lives. These recent findings underscore the need for targeted clinical assessment, patient education, and accessible therapies to reduce symptom burden and improve the overall quality of life for women in perimenopause. The symptoms are closely linked to psychological and lifestyle factors, and an early, individualized treatment plan helps to improve the biological and social determinants of women's health during this critical transition phase [6,7,8].

5.3. Psychological and Emotional Well-being

Psychological and mental health challenges represent another crucial aspect of the menopausal transition. Perimenopause has been described as a period of heightened vulnerability in which fluctuating hormone levels, physical changes, and psychosocial stressors interact to increase risks for body image concerns, disordered eating, and mood disturbances [10,15]. These symptoms are often underestimated compared to physical complaints, yet they strongly influence quality of life [9,10,15].

A recent systematic review reported that menopausal symptoms and body composition changes, such as increased fat mass and decreased muscle mass, are closely linked to higher body dissatisfaction, which in turn is associated with elevated depressive symptoms, anxiety, and unhealthy eating behaviors [9,10]. Like puberty and the postpartum period, perimenopause is a life stage in which rapid biological and psychosocial changes heighten body dissatisfaction, while cultural ideals of thinness and youth exacerbate these concerns. Such perceptions may lead to disordered eating, with evidence suggesting that perimenopausal women are particularly vulnerable to binge eating, whereas restrictive eating patterns appear more common in postmenopausal women [10,15]. These behaviors not only affect mental well-being and quality of life but also contribute to long-term health risks such as obesity, metabolic syndrome, and osteoporosis [9,10,12,15].

Beyond eating-related issues, depressive symptoms are among the most prevalent psychological concerns during perimenopause. A systematic review and meta-analysis showed that women in this phase are nearly twice as likely to develop depressive symptoms compared to premenopausal women, even after accounting for vasomotor complaints [12]. This finding supports the hypothesis that fluctuating or declining estrogen levels disrupt neurotransmitter systems involved in mood regulation, contributing to depressive vulnerability [12,15]. Women with a history of depression have an especially high risk, with some studies reporting up to thirteen-fold higher odds of recurrence during the menopausal transition [12]. The study by Badawy et al. (2024) suggests that there are two theories which link vasomotor symptoms with sleep problems and in turn trigger low mood: the estrogen withdrawal theory (Schmidt & Rubinow, 1991) which states that declining or fluctuating estrogen levels in women who are already susceptible or predisposed can trigger new depressive symptoms or exacerbate existing ones. This is based on the fact that estrogen influences important neurotransmitters involved in mood regulation, including dopamine, norepinephrine, β-endorphin, and serotonin. And the domino hypothesis (Freeman, 2015), which assumes that vasomotor symptoms such as hot flashes and night sweats disrupt sleep, and that poor sleep then leads to a bad mood. However, the evidence for these theories is not entirely clear as large studies by Bromberger et al., 2007; Bromberger et al., 2010; Tang et al., 2020; Badawy et al., 2024 have concluded that the risk of depressive symptoms remained elevated even after controlling for vasomotor symptoms. This suggests that hormonal changes during perimenopause may play an independent role in the development of depressive symptoms [12].

It should also be emphasized that psychological reactions can exacerbate physical symptoms, creating a reciprocal relationship between somatic and emotional health. Alongside pharmacological options, psychological and behavioral interventions have shown promise in alleviating these mental health burdens. Current studies indicate that cognitive behavioral therapy and mindfulness-based interventions can improve coping strategies, reduce stress reactivity, and improve acceptance of the changes associated with menopause. A large randomized controlled trial showed that mindfulness-based stress reduction significantly reduced depressive and anxiety symptoms in perimenopausal and postmenopausal women and even had a positive effect on urogenital and vasomotor symptoms [11]. This underscores the potential of psychosocial interventions to improve resilience and overall psychological well-being during this time.

These findings highlight that psychological symptoms are not secondary to physical ones but rather central to the experience of menopause. Taken together, high-quality evidence consistently shows that perimenopause is associated with a greater risk of depression, anxiety, negative body image, and disordered eating behaviors, all of which exert a profound impact on women's health and daily functioning [9,10,11,12]. They emerge from a complex interplay of biological changes, cultural expectations, and individual vulnerabilities, and their impact on daily functioning and well-being is profound. These results show how important early screening, integrative treatment strategies, and preventive psychosocial support is. Not only to reduce symptoms and risks to mental health, but also to promote acceptance and well-being among women during this natural phase of life and further avoid long-term health consequences arising from mental health problems related to menopause [10].

5.4. Impact of perimenopausal symptoms on Sexual Health and Quality of Life

Perimenopause has a significant impact on women's quality of life (QoL) and sexual function due to a variety of physiological and psychosocial changes. In particular, genital, sexual, and urological symptoms, which are often summarized under the term "urogenital syndrome," affect more than one-third of women in perimenopause and lead to a high prevalence of sexual dysfunction between 18.4% and 45% [16]. In addition to these symptom-related complaints, 23.5% to 30.2% of women in perimenopause report a significant deterioration in their health-

related quality of life (HRQOL), which is due to the cumulative effect of physical complaints, psychological symptoms, and fatigue [16].

Sexual function is influenced by a combination of physiological, hormonal, and psychosocial factors, especially during perimenopause. A decline in estradiol and androgen levels, particularly testosterone and dehydroepiandrosterone sulfate (DHEAS), is closely associated with a decrease in sexual desire, arousal, orgasmic ability, and lubrication [18]. Nazarpour et al. (2016), in their review article, point out that hormone therapy (HT) improves sexual function such as orgasm, lubrication, and pain, but the effects on desire and arousal are unclear. According to Nazarpour et al. (2016) influencing factors include age, the sexual health of the partner, the phase of menopause, the intensity of menopausal symptoms, body mass index, birth history, and chronic diseases. Social determinants such as cultural expectations, interpersonal relationships, and access to a sexual partner also influence sexual well-being during this phase of life and play a critical role [9,14,18]. While the direct effects on sexuality in terms of quality of life are mixed, regular physical activity improves sexual satisfaction and everyday functioning [17,18].

However, barriers to accessing effective healthcare are also described in relation to sexual health and reduced QoL. Surveys show that only a minority seek professional help to manage menopausal symptoms, with the most commonly cited reasons being dissatisfaction with available services, fear of the risks of hormone therapy, or limited knowledge of alternative treatment options [16]. As a result, women in menopause continue to be at risk of a decline in their QoL and sexual function, highlighting the importance of developing accessible, evidence-based, and holistic strategies to support health and well-being during this transitional phase of life. The integration of hormonal, lifestyle, and psychosocial approaches may represent the most comprehensive approach to maintaining sexual health and improving the overall quality of life for women in perimenopause [16,17,18].

5.5. Role of Healthcare Providers in Perimenopausal Care

WHO states that perimenopausal and postmenopausal women need access to quality health services and that menopause-related information and services until today are a significant challenge in many countries. The WHO specifically points out that menopause can cause

symptoms that affect health and QoL, and that health-care settings should be able to support women with these symptoms [13].

The British National Health Service (NHS) states that general practitioners and gynecologists should recognize and treat most menopausal symptoms, initiate treatment such as hormone replacement therapy (HRT), and coordinate referrals to specialists when needed [5,40]. Also, WHO guidelines recommend that doctors caring for women going through menopause should advise women on the benefits and risks of HRT, discuss treatment options, and make decisions based on an individual basis, referring complex cases or patients with contraindications to menopause specialists [13]. The European Menopause and Andropause Society (EMAS) supports the statements of WHO. EMAS further underscores the importance of a multidisciplinary approach that ensures sexual health, bone and cardiovascular risks, and psychosocial aspects are treated holistically through coordinated referrals to specialists [19].

Despite clear definitions of roles and responsibilities of healtcare providers in the guidelines, systematic evidence shows that there are significant barriers at almost every step in the management pathway [14,34]. The systematic literature review by Thavaban et al. and Barber et al. identified widespread problems that hinder adequate treatment of menopausal symptoms, including poor experiences with healthcare professionals, lack of confidence and inadequate training among healthcare providers [14,34,35,39,42]. Many women report receiving inadequate information and support from physicians, these poor clinical interactions contribute to underreporting and undertreatment of menopausal symptoms [14,34]. However, healthcare providers also describe obstacles in treating women during perimenopause. Limited office hours, insufficient training and knowledge about managing perimenopause, and the need to tailor HRT or lifestyle recommendations to each individual can hinder timely diagnosis and appropriate treatment, contributing to the gaps in care that many women face [14]. District nurses also described a lack of time, resources, and priority to provide adequate care for women with menopausal symptoms. Due to the lack of prioritization of preventive care, including work with menopausal women, district nurses felt they were failing these women [42].

Thavabalan et al. and a survey by the Royal College of Obstetricians and Gynaecologists identified multiple structural barriers in primary and specialist care [14,35]. For example, only half of the general practitioners (from the UK) had received special training on the subject of menopause and 58% of women in the United Kingdom did not have access to local menopausal-trained healthcare providers [35]. Swedish district nurses stated that they had gained their

knowledge about menopause from lectures given by the National District Nurses Association, but that their knowledge did not exceed that of a layperson who had quickly and eagerly researched the topic [42]. In the study by Carlsson et al. (2025), almost all district nurses stated that they did not feel competent in relation to the interactions between lifestyle, menopausal symptoms, and the estrogen preparations they are allowed to prescribe. However, the interviews with the nurses also revealed large heterogenity in their medical knowledge of menopause; some felt confident in their competence, others relied on their self-acquired knowledge, and others in turn, stated that they lacked experience.

This gap in knowledge among health care workers leads to impaired health care for women in menopause. Many general practitioners have limited or outdated knowledge about the risks and benefits of hormone replacement therapy, continue to have concerns about breast cancer risk and are reluctant to prescribe therapy beyond five years, despite updated practice standards [14,34,35].

This uncertainty contributes to HRT being prescribed too rarely and to inconsistent advices in primary care. In contrast, gynecologists reported an “explosion” of referrals in the study by Thavabalan et al., but many of the women affected could have been treated in primary care. This trend has contributed to long waiting lists in gynecological practices, while at the same time some women with truly complex needs, such as women with cancer, have not been referred appropriately [14].

Although access to healthcare for perimenopausal women remains uneven, the majority of women who seeked help, reported that they had also received treatment and support. Furthermore, a large proportion of women who seeked help believed that they had changed their lifestyle to become more health-conscious [36].

In Sweden, for example, almost all general practitioners and gynecologists report treating women in menopause regularly, and 94.6% of these doctors regularly prescribe HRT for menopausal symptoms. However, the type of healthcare provided by general practitioners, gynecologists and district nurses varies in its focus, as swedish national statistics show, with 69% of MHT prescriptions being issued by gynecologists, compared to only 24% by general practitioners [39,42]. The statistics also showed that general practitioners were more likely to involve psychologists, physiotherapists, or nutritionists in the treatment, therewith taking a more holistic approach. Meanwhile, gynecologists took over the direct prescription and specialist monitoring [39]. In Sweden, district nurses are often the first point of contact when menopausal women seek

medical help in the primary healthcare setting, as their role is to prevent disease and promote health. The treatment of women by district nurses depends on their subjective experience, the severity of their symptoms, and the extent to which their quality of life is affected. If women have severe symptoms, the nurses refer them to specialists such as specially trained family doctors or gynecologists. For milder symptoms, self-care advice on lifestyle and physical activity was given to bring about positive lifestyle changes. Some of the nurses also said they recommended literature, podcasts, or social media for more information on menopause [42]. In general, more and more women are also using the internet and social media to search for information and exchange ideas about menopause and its treatments [38,42]. Social media can be a good tool for facilitating communication, creating communities, and reducing stigma. However, critical thinking and caution is required, as commercial portals and discussion forums have the potential to spread misinformation and biased information designed to influence certain treatment approaches for profit [38].

These differences in the focus of treatment may be due to differences in training, knowledge of current guidelines, and confidence in the guidelines [39]. Nevertheless, growing awareness of menopause and ongoing research are showing promising models for approaching the gap in the current healthcare system, as 77% of women surveyed said they would participate in group counseling if it gave them access to specialist medical advice [35]. Digital interventions such as the MyMenoplan.org website has shown to reduce conflicts in deciding treament, improve knowledge, and lead to a greater willingness to undergo treatment. In addition, this provides physicians with a new resource that reduces time pressure during consultations and facilitates shared decision-making [38].

In summary, NICE guidelines and EMAS explicitly recommend that health systems support the training of health care providers and clear referral pathways so that primary care providers can treat most cases and identify those that require specialist care [5,19]. The WHO also emphasizes the need to integrate information and services related to menopause into health systems and to improve awareness of and access to appropriate care [13]. Overall, despite clear guideline recommendations, persistent gaps in provider knowledge, structural barriers, and patient-provider communication issues continue to limit access to effective perimenopausal care, underscoring the need for improved training, standardized referral pathways, and appropriate healthcare delivery.

5.6. Impact of Exercise and Physical Activity

Physical activity and exercise are recognized as critical interventions for reducing perimenopausal and menopausal symptoms, improving quality of life (QoL), and promoting long-term health during Menopause. Menopausal transitions are associated with a spectrum of symptoms including vasomotor disturbances, sleep disorders, mood alterations, sexual dysfunction, decreased bone mineral density (BMD), and cognitive decline, all of which can negatively impact physical, mental, and sexual QoL [17,22,23,24,25,41].

Sleep and psychological health are particularly affected during perimenopause, with prevalences of insomnia and sleep disturbances of 39%–47% [20]. Multiple studies show, that specific exercise interventions, such as aerobic, resistance, and mind–body practices like Qigong and Tai Chi, if performed 3–5 times per week for at least 12 weeks, can improve sleep quality, fatigue, irritability, and psychological well-being [20,24,22]. These benefits are through regulation of circadian rhythms, thermoregulation, neurotransmitter modulation, and a reduction in anxiety and depression [20].

Studies show different outcomes about the effect of structured exercise on sexual function: while Nguyen et al. states, that pelvic floor muscle training (PFMT) has shown to enhance sexual arousal, orgasm, and overall sexual satisfaction, Carcelén-Fraile et al. did not see a significant improvement in their studies outcome [17,21]. Furthermore, aerobic and resistance training can indirectly improve mood and overall physical fitness, which may contribute to enhanced sexual function over time [21]. Consistently associated with an improvement of physical function, muscle strength, and bone health are aerobic and resistance exercise interventions. Aerobic exercise like walking, especially Nordic walking or brisk walking improves mood, sleep, and psychological health. While resistance training (RT) with elastic bands or weight machines strengthens muscles and preventing osteoporosis by increases bone density [22,23]. Mind–body exercises such as Tai Chi significantly increase lumbar spine BMD, while brisk walking increases femoral neck BMD, with benefits maintained even for several weeks after intervention cessation [23]. These findings highlight the importance of exercise and have shown that at least 12–48 weeks of consistent activity is required to achieve measurable improvements [22,23].

Multiple instruments like the Blatt-Kupperman Index (KI) and different, evidence based QoL scales have been used to quantify the symptom reduction. Systematic reviews have reported reductions of 15–21% in total KI scores after exercise interventions, with significant improvements in paresthesia, irritability, fatigue, arthralgia, myalgia, insomnia, and hot flushes, even though effects on depression and vasomotor symptoms are less consistent in the data provided [17,22,24]. Especially, interventions which combine exercise with dietary modifications or patient education showed high benefits for symptom reduction and health behavior modification [24]. Additionally to symptome reduction and positive health behaviour modification, a significant reduced risk in late-life dementia was seen in patients which exercised regularly with a moderate intensity of 150 minutes per week. Simmons et al. (2023) states, that the reduced risk for dementia in physically active patient might be grounded in a reduction of estrogen-induced neurodegeneration by increasing brain-derived neurotrophic factor (BDNF) and improved cerebral blood flow [25].

In summary, exercise is a safe, non-pharmacological intervention that improves multiple health aspect during perimenopause and menopause. Evidence suggests, that regular aerobic, resistance, and mind–body exercise improves sleep, psychological well-being, sexual function, bone health, and potentially cognitive outcomes [17,22,23,24,25] Nevertheless, exercise programs need to be adjusted individually to the patients health status, symptom profile, and exercise adherence and a minimum of 12 weeks of consistent activity is recommended to achieve a positive impact.

5.7. Impact of Nutrition on Perimenopausal Symptoms

The transition to menopause is characterized by multidimensional changes that affect women's nutritional and physical health. Perimenopause is considered particularly susceptible to eating disorders, comparable to other hormonally dynamic phases of life such as puberty, pregnancy, and the postpartum period. Restrictive eating behaviors during perimenopause can lead to nutrient deficiencies, loss of muscle and bone mass, and psychological distress, while disinhibited behaviors such as binge eating are associated with increased BMI, metabolic disorders, and reduced QoL. Symptoms such as hot flashes, sleep disturbances, and mood swings can further exacerbate dissatisfaction with one's own body and maladaptive eating habits [10].

Targeted nutrient compounds show promise for alleviating specific menopausal symptoms. A randomized, placebo-controlled study of healthy Japanese women showed that four weeks of daily supplementation with 270 mg of chlorogenic acids (CGAs) significantly reduced the frequency and severity of hot flashes and sweating and improved the overall symptom burden as measured by the modified Kupperman Index. This is probably due to the fact that CGAs may have antioxidant effects, increase the bioavailability of nitric oxide, and modulate the activity of the autonomic nervous system, thereby improving vasomotor stability and sleep quality [26]. Sleep disorders are one of the most common complaints. A systematic review of 59 studies by Polasek et al. (2022) found that most dietary interventions improved subjective sleep quality, with isoflavones, soy products, and black cohosh emerging as the most promising agents. Isoflavones may work by binding to estrogen receptors as phytoestrogens, thereby alleviating the severity of symptoms, while black cohosh may influence neurotransmitter systems such as serotonin and GABA. Other interventions, such as tart cherry juice, tryptophan-rich foods, and valerian, have also shown benefits, but have not yet been fully proven in sufficiently meaningful studies [27].

Cardiometabolic risk factors increase during menopause and are therefore also an important aspect of nutritional research. A Latvian cohort study showed a close correlation between dietary habits and changes in the plasma lipid profile, an evidence-based risk marker for cardiovascular diseases (CVD). High intake of refined sugar, syrup, and fruit juices was associated with elevated LDL-C, non-HDL-C, and residual cholesterol levels, while higher intake of meat and poultry was negatively associated with total cholesterol. These findings show how dietary habits interact with estrogen deficiency-induced dyslipidemia and increase the risk of cardiovascular disease in middle age [28].

Bone health is equally influenced by nutritional factors. Osteoporosis and fragility fractures occur significantly more frequently in postmenopausal women than in premenopausal women, with calcium intake and diet quality playing a crucial role in prevention [29]. Current data suggest that adherence to the Mediterranean diet (MD), which is rich in fruits, vegetables, legumes, fish, and olive oil, supports bone health and reduces the incidence of fractures. Although a prospective study of perimenopausal and postmenopausal women found no significant association between adherence to the MD and calcium intake, nutritional counseling alone significantly improved MD adherence scores, indicating the importance of nutritional counseling as a preventive strategy against osteoporosis [19,29].

Taken together, these studies underscore the multifaceted role of nutrition during menopause. Maladaptive eating habits increase physical and psychological risks, but targeted active ingredients such as CGAs, isoflavones, black cohosh, and specific dietary adjustments such as the Mediterranean diet offer symptom relief and disease prevention. It should also be emphasized that nutrition not only influences acute symptoms, but also contributes to long-term positive health outcomes and can reduce cardiovascular and skeletal risks [10,26,27,28,29].
Despite the promising results, some limitations must be considered, as many studies were based on small samples, such as the work of Enokuchi et al.,2020, or were of observational nature, such as the work of Quattrini et al., 2021, and Aleksejeva et al., 2021, which limits causal conclusions. Improvement in symptoms was often assessed using subjective measures such as hot flash diaries or sleep quality indices, which increases the possibility of bias or misreporting [27]. Furthermore, the heterogeneity of interventions and outcome measures makes direct comparison between studies difficult, and there is little long-term follow-up data available. In addition, many studies underrepresent diverse populations, as they predominantly focus on Japanese or European cohorts, which may limit the generalizability of the results. Larger, sufficiently meaningful randomized controlled trials with standardized outcome measures, longer follow-up periods, and more diverse samples are therefore needed for a better and more evidence-based demonstration of the role of nutrition in alleviating menopausal symptoms and the associated health risks.

5.8. Alternative, non-hormonal treatment options

Hormone replacement therapy (HRT) is the recommended first-line treatment for vasomotor symptoms in menopause if there are no contraindications and has been proven to be very effective in treating symptoms. However, HRT is rejected by many women due to potential risks [33]. Non-hormonal pharmacological approaches, including sedative antidepressants such as mirtazapine, trazodone, or agomelatine, can improve accompanying depression and insomnia, but they can cause side effects such as weight gain, dry mouth, dizziness, constipation, or sexual dysfunction [31]. Complementary and alternative medicine (CAM) is increasingly sought and used by women: 22-61% of Western women going through menopause use therapies such as acupuncture, nutritional interventions, exercise, yoga, and aromatherapy to alleviate perimenopausal symptoms [30,33]. Acupuncture is one of the most commonly used CAM therapies. Recent systematic reviews and meta-analyses suggest that acupuncture can be effective

in treating perimenopausal depression (PMD) and insomnia (PMI), both as a standalone treatment or as a supplement to standard therapy [30]. In a feasible, patient- and evaluator-blinded, randomized, sham-controlled study, acupuncture significantly reduced symptoms of insomnia in women with comorbid PMD and PMI, with medium-term benefits lasting up to eight weeks after the end of treatment. Although the specific antidepressant effects still need to be investigated further, acupuncture is safe, well tolerated, and current findings indicate that it does not alter reproductive hormone levels, suggesting that its effects are more likely due to the modulation of neurotransmitters, reduction of anxiety, and improved QoL than to endocrine changes [31].

As mentioned above, dietary interventions, especially foods rich in phytoestrogens and herbal supplements, have been shown to be effective in relieving vasomotor and psychological symptoms, however, probiotic and paraprobiotic measures are also promising in terms of relieving menopausal symptoms. The intake of Lactobacillus gasseri CP2305 in middle-aged women improved mild psychological and vasomotor symptoms without directly affecting reproductive hormones, suggesting an effect through modulation of the gut-brain axis and autonomic nerve activity [32]. These results underscore the potential of microbiota-targeting interventions as non-hormonal adjuvant therapies, but more evidence-based studies are needed in this area to definitively prove the effect of probiotic and parabiotic measures.

Physical activity and exercise, including aerobic and strength training, have been shown to improve cardiovascular, musculoskeletal, and metabolic health, and can also have a positive effect on vasomotor symptoms of menopause and psychosocial well-being. Yoga interventions in particular support sleep quality, mood, and stress reduction, as yoga has been shown to not only have relaxing, strength- and flexibility-enhancing properties, but also to have a positive influence on cognitive functions via neurohormonal and autonomic pathways [33]. According to the current studies, these evidence-based adjuvant and alternative therapies offer non-hormonal strategies for improving the quality of life and reducing symptoms of perimenopausal women. They can be used either as single measures or alongside conventional treatments such as HRT or other pharmacotherapy [30,31,32,33]. In addition to the above-mentioned treatment options, there are many studies investigating the influence of other adjuvant, non-hormonal therapies, and a lot of of research is currently being conducted. A larger amount of evidence based research is needed to scientifically prove the effects of individual treatment measures and their effectiveness as adjuvant therapies in all menopausal women.

6. DISCUSSION

Perimenopause is characterized by a high degree of heterogeneity in symptom severity and a similarly high degree of heterogeneity in examination methods and outcome definitions, which makes it difficult to draw conclusions across studies and transfer research findings into practice [22]. Many of the systematic reviews and meta-analyses summarized in this literature review highlight different measurement instruments e.g., Kupperman Index, PSQI, ISI, HAMD, FSFI, MENQOL, different study lengths, and different study periods, which together can lead to considerable statistical heterogeneity in the estimates [17,27,30]. In addition, some of the symptoms of menopause are only partially or subjectively measurable, which further limits the objective measurement of the course of symptoms. For further clarification of the different measures used in the studies a table in the appendix (Appendix 1, Table 8.1. Table of Questionnaires, p. 36) has been created. Most of the study results can only be measured using subjective outcome measures, such as self-reported diaries on hot flashes and PSQI scores, thus increasing the risk of placebo effects and reporting biases unless robust blinding and objective analysis points can be included [17, 20,27]. The high degree of heterogeneity is not only statistical in nature, but also results from differences in dosage, duration, and modalities of interventions, particularly, for example, in aerobic vs. strength vs. mind-body exercises; short-term dietary supplements vs. multi-component formulas or in combination with hormone therapies and other medications, which prevents reliable generalization of effect sizes across populations [22,27]. Short follow-up periods and small sample sizes are common problem of several studies, particularly in nutrition and CAM studies, which reduces their significance and limits the ability to assess the durability of the benefits or harms [26].

A second major limitation in the literature used above, but also in the current study situation in general, is the underrepresentation of various population groups, which limits external validity and equality in the implementation of findings [14]. Many intervention studies are regional or country-specific—for example, the chlorogenic acid study by Enokuchi et al. was conducted among Japanese women, and several exercise and nutrition studies specifically examined populations in Mediterranean or Northern European countries—so that the demographic and cultural contexts of symptom prevalence and response to treatment may differ from other global findings [26]. It is important to note that significant ethnic and geographical differences in the frequency and severity of vasomotor symptoms have been documented in some cases, so caution

should be exercised when generalizing the results of studies from individual countries to different clinical populations [13,26]. Socially and economically disadvantaged groups are also underrepresented in the available studies, and this pattern reflects the inequalities in access to the healthcare system identified in the qualitative literature and guidelines [13,14]. Several studies highlight that white, educated women in particular have greater access to medical care and also make use of it [14].

Thirdly, the research mentioned focuses heavily on individual therapeutic approaches, and the connection between integrated, multidisciplinary strategies such as hormone therapy, lifestyle changes, psychosocial support, and complementary therapies in combination is not apparent [33].

Both the WHO clinical guidelines and the british NICE guidelines recommend hormone replacement therapy as the first-line treatment for vasomotor symptoms, but to this day, many affected women and even some doctors still have safety concerns [14,34,35]. Many women prefer non-hormonal and/or complementary therapy options to manage their symptoms [1,14,34]. This shows that there is a significant gap between the current recommendations in the guidelines and the wishes of patients. Furthermore, there are contradictions in the literature regarding the safety, method of application, duration, and effectiveness of hormone replacement therapies, which often limits joint decision-making between patients and physicians. The lack of training on current findings and the associated uncertainty among physicians in prescribing certain therapies or professionally diagnosing and treating menopausal symptoms is also a major obstacle in the current healthcare system [13,14,34].

This gap could be closed by using complementary therapy options as multimodal care [22]. Acupuncture and mind-body practices such as yoga, qigong, or tai chi in particular show promising positive effects on menopausal symptoms, but further evidence-based research is needed due to the inconsistent evidence base [20,22,30,33]. This aspect can also be extended to dietary interventions and the use of dietary supplements, as substances such as isoflavones, black cohosh, and chlorogenic acids have been shown to have benefits on sleep and vasomotor symptoms [26]. However, the heterogeneity of the means, dosage, and test population is also a limiting factor here and is not meaningful enough to issue a clear, definitive clinical recommendation [27].

Fifthly, mental health is often not given sufficient consideration in standard menopause care, even though there is a clear link between menopause and an increased risk of depression [3]. While the the primary healthcare settings in the UK use a validated tool called PHQ-9 for general depression screening and management, there was no evidence found, that PHQ-9 is used for menopause-related depressive symptoms. This represents a gap in the literature. Additionally, the study from Carlsson et al. (2025) shows, that recommending more holistic healthcare approaches often depend on the individual healthcare provider, their education and personal willingness to gather information to support climacteric women [42]. The healthcare system does not adequately cover discussions about mental health and psychosocial support during menopause [14]. At the same time, many studies focus on physical factors, nutrition, and complementary approaches, rarely addressing the impact on mental health, and use heterogeneous or unvalidated measurement methods or evaluate mental well-being as a secondary endpoint [17,27,30]. Acupuncture studies and meta-analyses provide a concrete example of how including mental health outcomes can be highly informative and important: the summarized data show that acupuncture reduces HAMD scores compared to standard care and can be an effective supplement to antidepressants without directly affecting reproductive hormones [31]. RCT data also showed that acupuncture can improve sleep in women with comorbid perimenopausal depression and insomnia. This suggests that therapies targeting both mood and sleep should be given higher priority in future studies to further investigate multimodal approaches [30]. Microbiome-targeted approaches, such as the study on Lactobacillus gasseri CP2305, also report improvements in psychological and vasomotor symptoms. The theory is put forward that the interactions between the brain, gut, and endocrine glands support a relevant mechanistic pathway for the treatment of psychosomatic comorbidity [32]. But not enough evidence-based studies have been conducted to proof this theory.

In summary, the above-mentioned gaps and problems in the current state of research give rise to the following recommendations.

First, studies should standardize core outcome measures, including validated instruments and define primary endpoints and minimal clinically relevant differences in advance to ensure greater homogeneity across studies [17,27,31].

Second, future studies should increase the sample size and extend the follow-up intervals to evaluate and analyze the durability of effects and undesirable long-term consequences.

This applies in particular to studies on nutritional and microbiome interventions, which have only short study periods in the current literature [22,26].

Thirdly, diverse recruitment strategies should be used to ensure a representative selection in terms of ethnicity, socioeconomic status, and geographic regions so that the results are generalizable, globally applicable, and minimize inequalities [14].

Fourth, more studies should combine multiple models, i.e., multiple approaches such as exercise, nutrition, psychological therapy, and selected CAMs, rather than just examining the effects of single treatment approaches [22]. Multimodal approach studies would show better and more realistically how the applications can be integrated into real healthcare and used to maximum benefit [14,22]. Finally, implementation studies are needed to evaluate how multidisciplinary, guideline-compliant care (primary care + mental health + physical therapy/nutritional counseling + referral to specialists) can be provided equitably in real-world healthcare systems. This priority, which is supported by both the authors of the guidelines and qualitative studies on barriers to care, is very important [5,14,34].

In summary, this literature review shows that non-hormonal and complementary strategies offer considerable potential for treating perimenopausal symptoms. However, their implementation in practical, guideline-compliant recommendations for perimenopausal healthcare is currently limited by significant barriers, such as a lack of large-scale studies, diversity, and long-term follow-up. To close these gaps in the healthcare system, a more coordinated and strategic research agenda is needed. Healthcare providers play a crucial role in this process; they must have the necessary up-to-date knowledge, financial and organizational resources, and tools to effectively integrate these promising findings into routine menopause care. Only then, a transition from the current fragmented models of healthcare care to a realistic, holistic approach that systematically incorporates mental health and lifestyle support into clinical practice, is possible.

7. CONCLUSION

The analyzed research findings show that perimenopause is a complex and highly individual biopsychosocial transition phase: a phase that can have a profound and long-term impact on a woman's physical, mental, and social well-being. Although perimenopause is an experience that every woman will go through at some point int their lifes, a significant discrepancy in healthcare provision has been seen. Gynecologists and general practitioners play a crucial role in supporting women through this transition, but studies show that there is still a need for better education of health providers. Many women report receiving only fragmented care, indicating a systemic problem where the knowledge of healthcare providers and the problems of patients often do not align.

The literature also shows that lifestyle interventions—including exercise, proper nutrition, and methods to strengthen the mind-body connection—are successful but are not yet fundamental components of symptom management. Furthermore, this review has shown that mental health is a crucial but often overlooked aspect of perimenopause and has been insufficiently researched. This leads to a significant gap in understanding how best to support women's emotional well-being during this time.

In summary, this review shows, that an evidence-based, holistic and individualized health-concept is needed, which integrates medical, psychological and lifestyle-related interventions to ensure an effective and holistic treatment of women going through menopause.

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9. APPENDIX 1

8.1. Table of Questionnaires

No.	Study name	Author	Publication year	Scale used	Comment
1	A qualitative assessment of health behaviors and experiences during menopause	Marlatt et al.	2018	KI	Used a modified KI - not further specified
8	Vasomotor and physical menopausal symptoms are associated with sleep quality	Kim et al.	2018	PSQI, MENQOL	
9	Associations between menopause and body image	Vincent et al.	2023	KI	
16	Effects of a therapeutic lifestyle modification intervention on cardiometabolic health, sexual functioning and health-related quality of life in perimenopausal Chinese women	Wang et al.	2024	FSFI, CVFSFI	RCT protocol in chinese perimenopausal women and therefore using the chinese version of the FSFI (CVFSFI)
20	Effects of exercise on sleep in perimenopausal women	Zhao et al.	2023	ISI, KI, PSQI	
21	Effects of Physical Exercise on Sexual Function and Quality of Sexual Life Related to Menopausal Symptoms in Peri- and Postmenopausal Women	Carcelén-Fraile et al.	2020	FSFI, MENQOL, HFRS and other surveys	multiple different instruments are reported
23	Effects of Tai Chi and brisk walking on the bone mineral density of perimenopausal women	Cheng et al.	2022	KI	
24	Impact of Exercise on Perimenopausal Syndrome	Philip et al.	2025	KI	
26	Effects of Chlorogenic Acids on Menopausal Symptoms in Healthy Women	Enokuchi et al.	2020	KI	
27	Nutritional interventions in treating menopause-related sleep disturbances	Polasek et al.	2023	ISI, KI, PSQI	multiple different instruments are reported
30	Acupuncture as an Independent or Adjuvant Management to Standard Care for Perimenopausal Depression	Zhao et al.	2021	HAMD, KI	reporting different instruments and recommends using ISI and PSQI for future studies
31	Acupuncture for comorbid depression and insomnia in perimenopause	Zhao et al.	2023	HAMD, KI, PSQI, Meno-D	Used HAM-D17 variant

APPENDIX 2

8.2. Table of identified studies

Study Design	Population	Focus	Key Findings	Limitations	Incl. Criteria	Use in Review
Aarshageetha et al., 2023 *Role of Alternate Therapies to Improve the Quality of Life in Menopausal Women*						
Systematic review	Mixed menopause populations	Complementary/ alternative therapies	Some benefit	Heterogeneous	Yes	Yes
Vincent et al., 2023 *Associations between menopause and body image*						
Systematic review	18 studies; middle-aged women, multiple countries	Menopausal symptoms & body image	Symptom burden linked to negative body image	Mostly cross-sectional	Yes	Yes
Marlatt et al., 2018 *A qualitative assessment of health behaviors and experiences during menopause*						
Cross-sectional questionnair	1611 women ≥ 40 y.o., USA	Health behaviors and symptoms	High interest in lifestyle programs; insomnia/hot flashes severity	Self-reported outcome measures, non-random	Yes	Yes
Barber & Charles, 2023 *Barriers to Accessing Effective Treatment and Support for Menopausal Symptoms*						
Qualitative interviews	20 women. 45–60 y.o., UK	Barriers to HRT and healthcare	Knowledge gaps, stigma, varied GP confidence	Qualitative, UK focused	Yes	Yes
Quattrini et al., 2021 *The Mediterranean Diet in Osteoporosis Prevention*						
Prospective observational study	200 women, age 30–80, Italy	MD & calcium intake	MD adherence improved after interview; small calcium change	Non-randomized, broad age range, self-reported	Yes	Yes

Thavabalan et al., 2025 *Barriers to the safe discussion of the experience and management of menopausal symptoms*						
Systematic review	21 studies; menopausal women	Barriers to symptom discussion & care	Limited education; poor HCP experience	Qualitative only, broad scope	Yes	Yes
Baker & Runfola, 2016 *Eating disorders in midlife women: A perimenopausal eating disorder*						
Narrative review	Midlife/peri menopausal women	Estrogen fluctuations & eating disorders risk	Perimenopause is a vulnerable time	Narrative, limited data	Yes	Yes
Simmons et al., 2024 *Perimenopausal Physical Activity and Dementia Risk*						
Systematic review	14 studies; peri-menopausal women	Physical activity & dementia risk	≥10 MET-h/week linked to lower risk	Observational, heterogeneous	Yes	Yes
Cheng et al., 2022 *Effects of Tai Chi and brisk walking on the bone mineral density of perimenopausal women*						
RCT	China; peri-menopausal women	Tai Chi vs brisk walking	BMD :Tai Chi ↑ lumbar spine, walking ↑ femoral neck	Short follow-up periode, only chinese women	Yes	Yes
World Health Organization. 2024 *Fact-sheet*						
Fact-sheet	worldwide	Facts about the menopause	Gaps in healthcare, support and treatment	Not very detailed	Yes	Yes
Aleksejeva et al., 2025 *Plasma Lipid Profile Among Perimenopausal Latvian Women in Relation to Dietary Habits*						
Randomize d trial	Latvia; peri-menopausal ; mean 49±3 y.o.	Dietary habits and plasma lipids	Sugars associated with adverse lipids; meat inversely with TC	Small trial; self-reported diets	Yes	Yes
Zhao et al., 2023 *Effects of exercise on sleep in perimenopausal women*						
Meta-analysis of RCTs	12 RCTs; 1493 peri-menopausal women	Relation of exercise and sleep	Exercise improves sleep; fitness Qigong 10–12 weeks, ≥3×/wk best	Heterogeneity	Yes	Yes

Tang et al., 2025 *Changes in menopause-specific quality of life between women with transdermal estradiol versus oral estrogens*						
RCT	China; 40–55 y.o., peri-menopause	Transdermal vs oral estrogens + cyclic progesterone	Both improved MENQOL; no clear route superiority	24-week timeframe, only chinese women	Yes	No – not relevant
Vaisar et al., 2021 *Perimenopausal Transdermal Estradiol Replacement Reduces Serum HDL Cholesterol Efflux Capacity but Improves Cardiovascular Risk Factors*						
RCT	101 peri-menopausal women, USA	Transdermal estradiol vs placebo	Estradiol lowered HDL; improved LDL-C/insulin resistance	Surrogate outcomes	Yes	No – not relevant
Philip et al., 2025 *Impact of Exercise on Perimenopausal Syndrome*						
Systematic review	Peri-menopausal women	Exercise impact on symptoms	reduced symptoms; variable vasomotor effect	Heterogeneity	Yes	Yes
Polasek et al., 2023 *Nutritional interventions in treating menopause-related sleep disturbances*						
Systematic review	59 studies	Nutrition interventions for sleep	Some benefit	Heterogeneous, little peri-specific data; low quality	Yes	Yes
Włodarczyk & Dolińska-Zygmunt, 2019 *Searching for predictors of sense of quality of health*						
Cross-sectional	201 women age 45–55., Poland	Predictors of perceived health	Self-esteem predict health sense	Cultural limits	Yes	Yes
Zhao et al., 2023 *Acupuncture for comorbid depression and insomnia in perimenopause*						
RCT	70 peri-menopausal women	Acupuncture for depression + insomnia	Improved sleep and depression	Small feasibility trial	Yes	Yes
Nik et al., 2022 *Prevalence of Psychosomatic and Genitourinary Syndrome Among Menopausal Women*						
Systematic review & meta-analysis	29 studies	Psychosomatic & genitourinary syndrome prevalence	Higher postmenopause; perimenopause intermediate	Cross-sectional	Yes	Yes

Kim et al., 2018 *Vasomotor and physical menopausal symptoms are associated with sleep quality*						
Cross-sectional	634 Korean women, age 44–56	VMS/physical symptoms & sleep	VMS and physical symptoms correlate with poor sleep	Self-report, only Korean women	Yes	Yes
Rostami-Moez et al., 2023 *Examining the Health-Related Needs of Females during Menopause*						
Systematic review	180 studies	Health & education needs in menopause	Training/ support needs	Broad scope; not peri-specific	Yes	Yes
Alblooshi et al., 2023 *Does menopause elevate the risk for developing depression and anxiety?*						
Systematic review	22 studies	Menopause & depression/anxiety risk	Increased vulnerability; VMS and prior depression key	Variable quality	Yes	No – not specifiied menopause phase, overlapping findings
Nazarpour et al., 2016 *Factors affecting sexual function in menopause*						
Systematic review	42 studies	Factors in sexual function	Multi-factorial determinants	Older data; heterogeneity	Yes	Yes
Wang et al., 2024 *Impact of menopause hormone therapy, exercise, and their combination on bone mineral density and mental wellbeing in menopausal women*						
RCT (Protocol)	94 peri-Menopausal women	Effects of therepeutic lifestyle modification	No outcome stated / conclusion	Single-center trial, proposal of protocol	Yes	Yes
Carcelén-Fraile et al., 2020 *Effects of Physical Exercise on Sexual Function and Quality of Sexual Life Related to Menopausal Symptoms in Peri- and Postmenopausal Women*						
Systematic review	11 prospective (8 RCTs)	Exercise and sexual function/QoL	Pelvic floor best; aerobic inconsistent	Limited trials	Yes	Yes
Zhao et al., 2021 *Acupuncture as an Independent or Adjuvant Management to Standard Care for Perimenopausal Depression*						
Systematic review & meta-analysis	25 RCTs; 2,213 peri women	Acupuncture for perimenopausal depression	reduces depression; adjunct > meds alone	Varying quality / comparators	Yes	Yes

Huang et al., 2023 *Experience and severity of menopause symptoms and effects on health-seeking behaviours*						
Cross-sectional online survey	UK, women, across all menopausal stages	experiences of individuals at all stages of menopause and their receptiveness towards group consultations	75% would be interested in group consultations	Data collection during Covid-19 pandemic, small social and demographic distribution	Yes	Yes
Martin-Key et al., 2023 *Perceptions of healthcare provision throughout the menopause in the UK*						
Mixed method study	952 women	Perception of healthcare provision during menopause	Improvement and more comprehensive information needed	Small social and demographic distribution	Yes	Yes
Sawada et al., 2022 *Effects of Lactobacillus gasseri CP2305 on Mild Menopausal Symptoms in Middle-Aged Women*						
RCT, double-blind placebo-controlled	80 women age 40–60, Japan	Lactobacillus gasseri CP2305	Reduced total /vasomotor/ psychological symptoms	Industry funding; mild symptoms, only japanese women	Yes	Yes
MacLellan et al., 2023 *Perimenopause and/or menopause help-seeking among women from ethnic minorities*						
Qualitative study	46 GPs, 14 women, UK	Phone and Online interviews	GPs and help-seeking women from ethnic minorities face big challenges	Small population, gender dysbalance	Yes	Yes
Wong et al., 2018 *Mindfulness-Based Stress Reduction (MBSR) or Psychoeducation for the Reduction of Menopausal Symptoms*						
RCT	Hong Kong; peri-menopausal age 40–60	MBSR vs education control	MBSR greater anxiety/ depression reduction	peri/postmenopausal women, only from hong Kong	Yes	Yes
NICE guideline, 2024 *Menopause: diagnosis and management | Guidance*						
Clinical guideline	UK	Identification/ management	CBT for VMS/sleep	UK context	Yes	Yes
Špačírová et al., 2019 *Cost-effectiveness of a primary care-based exercise intervention in perimenopausal women*						
FLAMENCO project	Spain; age 45–64	primary care exercise vs control	Cost-effective	Short horizon; age up to 64	Yes	Yes

Fu et al., 2018 *Anxiety, depressive symptoms, and cardiac autonomic function in perimenopausal and postmenopausal women with hot flashes*						
RCT secondary analysis	USA; peri/post with hot flashes	Mood vs autonomic function profile	↑ anxiety/ Depression	Secondary analysis	Yes	No – peri- and post-menopausal women
Enokuchi et al., 2020 *Effects of Chlorogenic Acids on Menopausal Symptoms in Healthy Women*						
RCT	Japan; age 40–59	Chlorogenic acids vs placebo	Fewer hot flushes; reduced severity; early mKMI reduction	Short periode, only japanese women	Yes	Yes
Avilés-Martínez et al., 2021 *Beneficios de un programa de ejercicio físico comunitario prescrito desde Atención Primaria en la salud de mujeres perimenopáusicas/menopaúsica*						
Quasi - experimental controlled	Spain; women age 40–70	community exercise vs inactive	QoL and fitness improved vs control	Non-randomized; wide age	Yes	No - language barrier
Snyder et al., 2025 *Positive impact of a menopause website – MyMenoplan.org – on treatment intentions, knowledge, and decision making*						
RCT	410 women, US	Impact of usage of MyMenoplan.org on treatment and knowledge	Effective model for educating and helping women and healthcare providers during menopause	Social, ethnic and demographic Distribution, self-reporting in control group	Yes	Yes
Eriksson et al., 2025 *Swedish physicians' knowledge of and prescribing practices for menopausal hormone therapy*						
Cross-sectional survey	542 Swedish physicians	Experience with MHT among phycisicans	GPs = lower awareness, less prescriptions in comparison to gynecologists	Web-based survey, only swedish doctors	Yes	Yes
Lu et al., 2020 *Musculoskeletal Pain during the Menopausal Transition*						
Systematic review & meta-analysis	16 studies; midlife women	MSP prevalence across stages	Peri MSP ~71%; peri > pre; severity rises with age	Heterogeneity; cross-sectional	Yes	Yes

Gordon et al., 2018 *Efficacy of Transdermal Estradiol and Micronized Progesterone in the Prevention of Depressive Symptoms in the Menopause Transition*						
RCT	USA; 172 peri/early post, age 45–60	TE 0.1 mg/d + intermittent MP vs placebo (12 mo)	TE+MP reduced depressive symptoms; stronger in early transition	Mixed peri/early post; single center	Yes	No – not relevant
Lee et al., 2023 *Impact of symptomatic menopausal transition on the occurrence of depression, anxiety, and sleep disorders*						
Retrospecti ve cohort	Korea, age 45–64	Symptomatic transition vs none	↑ risks for depression, anxiety, sleep disorders	Cofounding	Yes	No – overlaps with other studies
Vincent et al., 2024 *Disordered eating behaviours during the menopausal transition*						
Systematic review	10 studies; peri focus	Disordered eating during transition	Binge eating ↑ in perimenopause	Quality limits	Yes	Yes
Schmidt et al., 2021 *The short-term effects of estradiol, raloxifene, and a phytoestrogen in women with perimenopausal depression*						
RCT	Women with peri-menopausal depression	Transdermal E2, raloxifene, phytoestrogen vs placebo	TE improved vs phytoestrogen; no clear benefit vs placebo	Short duration	Yes	No – not relevant
Trujillo-Muñoz et al., 2025 *Effects of Physical Exercise on Symptoms and Quality of Life in Women in Climacteric*						
Systematic review & meta-analysis	8 RCTs; peri/post climacteric	Aerobic and resistance exercise	Aerobic improved symptoms/QoL, RT improved strength/BMD	Few trials; heterogeneity	Yes	Yes
Badawy et al., 2024 *The risk of depression in the menopausal stages*						
Systematic review and meta-analysis	16,061 women from pre-to post-menopause	Risk of depressive symptoms/ diagnosis by menopausal stage	Perimenopause associated with higher odds vs premenopause	Variable: staging criteria, depression measures; heterogeneity	Yes	Yes

Nguyen et al., 2020 *Exercise and Quality of Life in Women with Menopausal Symptoms*						
Systematic review & meta-analysis of RCTs	Women with menopausal symptoms	Exercise effects on quality of life during menopause	↑ HRQOL , benefits of aerobic/ RT, are inconsistent	Heterogeneity, small to moderate sample sizes; short follow-up	Yes	Yes
EMAS Guidelines and Education (2025) *Guidelines and education (European Menopause and Andropause Society | EMAS)*						
Clinical guidelines	For healthcare professional	Guidance and education on menopause care	Symptom management and midlife health; recent statements and practical resources	Not primary research, local adaptation and clinical judgment needed	Yes	Yes
NHS *Menopause - Help and Support*						
Informative website	For healthcare professional and patients	Guidance and education on menopause care	Symptom management and midlife health; recent statements and practical resources	Not primary research, local adaptation and clinical judgment needed	Yes	Yes
Nappi et al., 2021 *Menopause transition: a golden age to prevent cardiovascular disease*						
Article	Unknown- no full access	link between menopausal transition and cardiovascular disease risk	Menopausal transition is a time of accelerating cardiovascular disease risk	Unknown- no full access	No- no full access	Yes – as additional sources
Carlsson et al., 2025 *The Climacteric Transition: District Nurses" Role in Managing Women's Health*						
Qualitative Interview Study	12 district nurses, Sweden	district nurses' experiences working with climacteric symptoms among women in primary care	lack of knowledge, time, and organisational obstacles are highlighted	Only swedish, female nurses	Yes	Yes

Declaration

I, Sina Ganser, certify that this Research Paper on the topic

„Veselības aprūpe perimenopauzes periodā”
(Title of the Research Paper in Latvian)

„Health care during perimenopausal period”
(Title of the Research Paper in English)

is my own independent research. All other sources of data, definitions and quotations in my Research Paper are referenced accordingly. The text of this Research Paper has never been submitted in any way to any other National Examination Commission for evaluation in its entirety or parts, and has never been published in its entirety.

_____ /___Sina__Ganser__/
(Student’s signature) (Name, surname)

Riga, 03.10.2025