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## Theoretical Essay

# The beneficial effects of massage therapy for insomnia in postmenopausal women



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## ABSTRACT

With increases life expectancy, the incidence of undesirable manifestations of menopause has increased as well. The effects of lost ovarian function include progressive decrease in estradiol secretion, trophic changes in the breast, vasomotor symptoms, anxiety, depression, and sleep disorders. Insomnia, which has physiological consequences and can result in a loss of quality of life, is prevalent in women after menopause. Hormone therapy has been widely used to reduce menopausal symptoms, but its use in recent years has been questioned because of the reported risks of cardiovascular events and increased incidence of tumors. This controversy has generated significant interest in non-hormonal treatments among both physicians and patients. Our previous research has shown a positive effect of massage therapy on menopausal symptoms. We explored the hypothesis that massage therapy would produce beneficial effects in postmenopausal women through inflammatory and immunological changes. Recent results from self-report questionnaires have shown improvements in sleep pattern and quality of life following massage therapy. These findings demonstrate the effectiveness of massage therapy for the treatment of postmenopausal symptoms, particularly insomnia, and indicate that it is a promising line of research.

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## 1. Introduction

Epidemiological studies have shown an increased incidence of insomnia after menopause [1]. Many variables have been proposed to account for menopausal sleep difficulties, including sociodemographic, psychological, social support,

vasomotor symptoms, and self-perceived health-related or medical conditions.

Subjective evaluation of sleep quality in postmenopausal women has particular merit, as the perception of discomfort allows individuals to characterize and identify the factors that influence the quality of sleep during this phase [2]. Studies of

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subjective sleep parameters indicate a significant association between nocturnal hot flashes and sleep disorders [3,4]. This highlights the potential for confusing the correlation between sleep disorders and menopause with other age-related complications including depression, chronic pain, and increased morbidity. Any conditions that adversely affect sleep should be considered when postmenopausal women seek medical advice [5].

Menopause was considered an independent risk factor for sleep disorders after correction for confounding factors such as age, income, or the presence of depression. The diagnosis was based on a questionnaire, without polysomnography. Irritability and insomnia were reported by 60.2% of respondents, indicating that particular attention should be directed to peri- and postmenopausal women [2].

Studies indicate that sleep difficulties increase significantly during the menopausal transition [2-6]. However, data on sleep quality in postmenopausal women are limited [2]. Despite the high prevalence of insomnia and its significant consequences, insomnia is often not properly evaluated and treated [7]. The present research group has made a significant contribution to the body of data investigating the prevalence of insomnia in postmenopausal women [1,5,8].

Hormone therapy (HT), consisting of the exogenous replacement of hormones previously produced by the ovaries, has been traditionally used to reduce the symptoms of menopause [9]. However, the results of recent studies on the effects of HT have given rise to controversy in scientific circles. The Heart and Estrogen/Progestin Replacement Study (HERS) Research Group evaluated the protective effect of HT in menopausal women on a large scale and obtained conflicting results [10]. The Women's Health Initiative (WHI), a significant study involving HT trials, found increased incidence of coronary heart disease, breast cancer, stroke and thromboembolism in the study group that received HT. Consequently, the HT trials in the study were stopped in 2002. The WHI study also concluded that the risks of HT exceeded the benefits and that this therapy should not be initiated or continued to prevent chronic disease in postmenopausal women. Following publication of the WHI results, patients and physicians were reluctant to use long-term estrogen therapy, particularly for women already at increased risk for cardiovascular disease or breast cancer. Therefore, demand for non-hormonal therapies for the management of the symptoms of menopause increased. This included the use of non-controlled drugs, antidepressants, and behavioral therapy [11-13]. Treatments such as behavioral therapy (sleep hygiene, sleep restriction, stimulus control, and relaxation) and cognitive therapy have shown positive effects on the factors that predispose and maintain insomnia [7].

Alternative therapies and complementary medicines are commonly used by women in several different countries, with many women seeking help for menopausal symptoms from sources such as soy-based food, medicinal herbs, acupuncture, and yoga. In most European countries and in Australia, more than 50% of the population reported they used alternative methods [14]. In 1990 in the United States, it was estimated that 425 million people (37.8% men and 48.9% women) sought some type of unconventional therapy [14]. It is noteworthy that the search for alternative therapies or

complementary medicines often occurs because of the symptoms of menopause, and research into the benefits of these non-conventional and non-pharmacological resources is being conducted [12]. A pilot study on the use of complementary and alternative medicine undertaken in New York City found that 50% of study participants used a complementary therapy as treatment, and it was considered effective in women [15]. Studies undertaken by the present research group have also shown that herbal medicines have potential benefits for postmenopausal women [13,16]. The increased demand for non-pharmacological interventions adds weight to the potential of massage as a therapeutic resource, particularly as massage is thought to contribute to health, is safe [17], and is accepted by women.

Massage is commonly regarded as a therapeutic tool with no scientific basis. However, it is known to effect the activation of arterial and venous blood flow in the lymphatic system and in the connective tissue and muscles, and is regarded as a treatment option for edema [18]. The musculoskeletal stimuli act on receptors for touch, pressure, heat, vibration, and pain and are transduced via the peripheral and autonomic nervous systems to the central nervous system (spinal cord and brain). The triggering of neurochemical reactions [19] such as relaxation, improved sleep, tranquility, wellbeing, decreased heart rate and breathing, peristalsis, increased diuresis, dysmenorrhea reduction, and restoration of homeostasis can be clinically observed [20,21].

Some studies have shown improvement in insomnia following an anti-stress massage [22,23]. It has also been reported that women experiencing insomnia as a symptom of menopause tend to select alternative therapies, particularly body therapies, as their first choice of therapy [24]. In a recent pilot study to investigate the benefits of massage in postmenopausal women with insomnia, the present research group found improvement in sleep patterns by polysomnography, including a significant decrease in REM latency and sleep stage 1, and a significant increase in sleep stages 3 and 4, in addition to significant improvement in anxiety and depression [25]. The study included use of a Sleep Diary, which enabled subjective evaluation. Sleep Diary analysis indicated that all participants fell asleep faster, experienced improved quality of sleep and felt better upon waking [25]. The present research group also conducted a randomized controlled trial using the same intervention as in the pilot study, which found a significant decrease in depression, insomnia and increased quality of life. This indicates an improvement in sleep quality and improvement of climacteric or perimenopausal symptoms [26].

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## 2. Final considerations

Considering the significant impact that the symptoms arising from the postmenopausal stage have on the quality of life for women in this phase, there is a real need for new treatment options in addition to hormonal therapy. The potential benefits offered by massage, either as a stand-alone non-pharmacological therapy or combined with other forms of treatment for the symptoms of menopause, highlight the need for systematic studies on the efficacy of this treatment technique. Therefore, in light of recent evidence on the positive effects of massage on

sleep quality published by the present research group, we intend to expand this area of research to verify its effectiveness in other biochemical, metabolic and immune system conditions. The findings from this line of research could support the potential of massage as a therapeutic tool to improve sleep quality in menopausal women.

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### Conflict of interest statement

None declared.

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