



THE IMPACT OF PSYCHONEUROBICS ON MENSTRUATION & MENOPAUSE.

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ABSTRACT:

Menopause is an unavoidable hormonal phenomenon that women undergo at the age of 42-54. Multiple vasomotor, physical, neuropsychological, and sexual symptoms are correlated with the decline in oestrogen levels following cessation of menstruation, which may impede quality of life. The goal of this study was to investigate the magnitude and associations between psychological symptoms among peri- and postmenopausal Emirati women (N = 60, mean age = 54.88 ± 6 years). The menopause-specific quality of life (MENQOL) and attitudes towards the menopause scale were interviewed by participants (ATMS). Vasomotor symptoms, weight gain, and exhaustion have had important direct effects on symptoms of anxiety, depression (weight gain and fatigue only), and psychological distress in four path study models. The effects of vasomotor symptoms and weight gain on symptoms of anxiety, depression (only vasomotor symptoms), psychological distress, and memory difficulties were significantly mediated by fatigue. These models clarified the variances in anxiety, depression, psychological distress, and memory disorders by 47.6 percent, 44.5 percent, 56.6 percent, and 29.1 percent, respectively. More adverse attitudes towards menopause were expressed by participants with more extreme menopausal symptoms, while regression analysis showed that only vasomotor symptoms could significantly contribute to ATMS ratings. In conclusion, psychological distress among menopausal women is common and is associated with vasomotor symptoms, fatigue, and body composition change (obesity). A main relation to negative attitudes towards menopause is demonstrated by psychological symptoms, along with vasomotor symptoms. Interventional therapies addressing psychological distress can also facilitate coping with the transition to midlife and enhance mental health among menopausal women.

Keywords: fatigue; depression; anxiety; sleep; memory; psychological distress; vasomotor symptoms; sexual symptoms; body weight/obesity; menopause; quality of life; attitudes toward menopause; Arab; Emirate

Introduction

The transition to menopause is marked by a massive decrease in the amount of oestrogen (a major female sex hormone), ovarian failure, and menstrual irregularities[1]. Menopause is defined as 12 consecutive months of cessation of menstruation after the last period[2]. It is a universal physiological disorder affecting more than 500 million women aged 42 to 55 years with an average starting age of 51 years[2-4] on an annual basis. The occurrence of many physical, sexual, vasomotor and psychological symptoms is caused by hormonal changes following the onset of menopause[4].

Menopausal women have a wide range of psychological symptoms relative to premenopausal women, including impaired memory and attention, depression, anxiety, insomnia, exhaustion, irritability, and a high degree of discomfort that can hinder coping and decrease the quality of life in this group[5]. In addition, the development of age-related pathologies such as cognitive impairment associated with Alzheimer's disease, particularly during the prodromal stage, can indicate severe neuropsychiatric symptoms, but are

misinterpreted as symptoms of normal ageing and go uncared for[6], which can have significant health-related disadvantages. On two main continents, Asia and Africa, the Arab world stretches over an area of 5 million square miles. It is made up of 22 countries with 423 million inhabitants who share the same language and the same cultural, historical and religious heritage[7,8]. Although some studies have examined menopausal symptoms in women from different Arab countries, most studies have concentrated on vasomotor and physical symptoms[4,9,10], while less attention has been given to neuropsychiatric symptoms. In this light, by examining the existence of common menopausal psychological symptoms among Emirati menopausal women as a sample of Arab women, the current study attempts to fill this void. In the transition to menopause, forgetfulness and declines in concentration, processing speed, and verbal fluency (indicated by trouble finding words) are common cognitive concerns supported by menopausal women and women.

The second most common menopausal symptom after vasomotor symptoms and joint stiffness is the decline in memory, and the severity of these symptoms can be very troubling [1,12]. Estrogen deficiency changes the structure and function of the brain, resulting in signs of cognitive ageing and vulnerability in genetically susceptible individuals to Alzheimer's disease. In particular, through its widely distributed estrogen receptors (ERs) beta and alpha, oestrogen, a neurosteroid with numerous neuroprotective effects, interacts with brain cells to control key processes related to executive functioning and memory: signal transduction and neurotransmission (e.g. acetylcholine, serotonin, noradrenalin and glutamate) in the prefrontal cortex, synaptic plasticity, pro

Symptoms of depression, anxiety, and sleep disruption are other neuropsychiatric symptoms associated with midlife transition cognitive function in women, but do not explain memory deficits in menopause. Women are at higher risk of depression than men, and this risk increases with ageing. Women are at two to four times higher risk of major depressive disorders in menopause transition than men. A recent large-scale cross-sectional study recorded a depression diagnosis (Short Depression Scale-10 at the Center for Epidemiological Studies) among 18.4 percent of Canadian middle-aged women living in the city. The highest rate of depression (odds ratio = 1.45; CI: 1.07–1.97) was supported by women undergoing menopause before the age of 40[18].

Similarly, the Beck Depression Inventory (BDI) survey of Turkish menopausal women revealed that 27.5% of them are affected by depression [19]. The decrease in oestrogen linked to menopause can cause mood dysregulation by impairing the development of major neuroprotective factors (e.g., brain-derived neurotrophic factor) and interfering with the synthesis of catecholamines such as noradrenaline by altering neurotransmission and upregulating the 5-hydroxytryptamine (serotonin) (5-HT_{2A}) receptor[1,11]. By modulating the fixed point temperature [1], the latter leads to hot flashes. 85 percent of perimenopausal women experience vasomotor symptoms (e.g., hot flashes and night sweats), the cardinal symptoms of menopause[1,12]. These signs are very annoying and are a significant risk factor for both sleep disorders and anxiety and/or depressive symptoms[16,18]. Increased severity of vasomotor symptoms and higher odds of depression (odds ratio = 1.21; CI: 1.02–1.44) among postmenopausal women on hormone replacement therapy (HRT, also known as menopause hormone treatment) was reported in a current study consisting of a sample of 13,216 Canadian women aged 45 to 64 years [18]. Numerous causes other than hormonal declines are correlated with mood changes affecting menopausal women, such as genitourinary symptoms (e.g., vaginal dryness/dyspareunia), less schooling, non-white ethnicities, history of smoking, history of anxiety and postpartum depression, nulliparity, obesity, traumatic life events, weak social support and partner death, low self-esteem, unemployment, encounter. In both men and women, advanced age is associated with disrupted sleep (insomnia, nighttime awakening, or waking early). Sleep

loss in women, however, is roughly twice that of men[1,12]. In their late reproductive years, both subjective self-reports and actigraphy studies reveal poor quality and quantity of night sleep among women, particularly before menstruation. Sleep problems caused by night sweat and hot flashes are closely related to hormonal decreases[1]. Meanwhile, sleep issues are due to many causes other than oestrogen deficiency in women aged 40 years and older, such as anxiety and/or depressive disorders, socio-economic problems, white race, and marital conflicts[1,11,21].

Inadequate sleep-related daytime fatigue and sleepiness can lead to injury, depressive symptoms and poor quality of life[1]. Exhaustion and burnout are closely correlated with menopausal symptoms, such as loss of energy and exhaustion, encountered by 43.9-64.7 percent of menopausal women, which can seriously compromise the quality of life of affected women [22-24]. Fatigue is characterised as a feeling of lack of energy, weariness, loss of drive, decrease or loss of ability to maintain even routine operations, overwhelming feeling of fatigue, fatigue, and physical or mental stress that occurs even without significant effort. Pathological fatigue is an increased level of normal "physiological" fatigue, and pervasive pathologies[24-26] can evoke it. There is a complex relationship between exhaustion and stress, which shifts dramatically during the menopausal transition[22].

Chronic fatigue in humans is actually characterised as a stress-related disorder involving multiple systemic dysfunctions that alter homeostasis and impede the ability of women to bounce back from either fatigue or distress[5,22]. In people with chronic fatigue syndrome, for example, dysregulation of the hypothalamic-pituitary-adrenal axis and recurrent activation of the sympathetic nervous system are normal and cause a wide range of symptoms that can induce excessive suffering[5,26]. Relatively limited studies are performed on menopause-specific fatigue, fatigue clarified predominantly by the endorsement of menopause transition rather than insomnia or depression[23]. Proof, however, denotes clear ties between menopausal exhaustion and emotional (depressed mood and perceived stress) negativity during menopause[27]. A variety of unpleasant symptoms such as discomfort, anxiety, insomnia, impatience, irritability and mood disorders typically accompany fatigue in general [5,21,23,26,28]. In this respect, a key cause of exhaustion, burnout, and low resilience among working nurses is recorded to be menopause-related fatigue. Meanwhile, social and organisational support services were unable to alleviate its impact. Specific interventions that promote energy recovery processes can therefore be needed by working menopausal women[22]. Research has shown that menopause-specific fatigue can be alleviated by pharmacological therapies (e.g., armodafinil, wake-promoting agent and stimulant of the central nervous system) and by non-pharmacological therapies such as hypnosis[23,29]. Weight status is a primary effector of menopausal and mood symptoms in peri- and postmenopausal women [27,30]. Oxidative stress and chronic inflammation are associated with ageing, which encourages the accumulation of saturated ceramide and diacylglycerol fatty acids, leading to increased total body fat and visceral adipose tissue [31,32]. Emotional distress associated with menopausal symptoms increases the development of cytokines and free radicals, leading to increased obesity/fat deposition[27].

On the other hand, by a complex mechanism, obesity leads to the development of neurodegenerative disorders such as depression, anxiety, and Alzheimer's disease. Cerebral insulin resistance, on the one hand, develops in obese people due to the depletion of adiponectin, an adipokine derived from adipose tissue that controls neurogenesis and lipid and glucose metabolism[33]. Obesity, on the other hand, entails pathological reshaping of the composition of the gut microbiome and activation of major oxidative and inflammatory pathways that fuel neuronal inflammation, an important aspect of mood and cognitive

disorder development[34,35]. Moreover, research indicates that the effect of clinical approaches used to treat menopausal symptoms such as physical activity is compromised by high fat mass[27]. Menopause views reflect women's assumptions regarding bodily and function changes associated with feminine ageing. Psychological complaints made by menopausal women are seen by some psychologists as reflections of societal expectations[36].

Research also highlights correlations between negative menopausal behaviours and the severity of menopausal symptoms (e.g. vasomotor symptoms and fatigue)[10] and psychological symptoms[19], yet results are contradictory. Among various cultures, attitudes towards menopause vary considerably. When associated with positive improvements in social status, they appear to be more positive [19]. Menopausal women in Japan, for example, express more optimistic attitudes towards menopause compared to women in Western countries[36]. In this light, in societies that perceive it as a partial death of a woman, attitudes could threaten femininity[36]. The degree to which menopausal women develop positive or negative attitudes toward this change in life is influenced by many factors. An available systematic review reports that the beliefs and attitudes of husbands towards menopause will largely affect marriage relationships, menopausal symptoms of women, and menopause attitudes[37]. The word used to express menopause in Arabic is "sen al yaas", which means "the age of despair or hopelessness". Despite the negative connotation of menopause in Arab countries, in-depth research shows that postmenopausal Arab women receive sufficient help from their families, engage in religious activities that they have not been able to participate in before, and display more socially involved roles than before [2,38]. Moreover, in the media, the word 'age of desperation or hopelessness' has recently been changed by a more optimistic term, 'age of wisdom or reverence.' A previous systematic analysis indicates a significant difference in the age of menopause onset and the incidence of vasomotor symptoms worldwide, with the lowest age occurring in Asia (42.1-49.5 years) relative to Europe and North America (50.1-52.8 years and 50.5-51.4 years)[39]. The United Arab Emirates (UAE) is a small Asian nation situated in the Gulf zone. Over the past few decades, there have been notable changes in the health sector associated with a rise in life expectancy (up to 83.4 years)[2,40]. The median age of menopause in the UAE (mean age = 47.3 ± 3.29 , range 40-59) is 48 years, which is slightly lower than the median age recorded in Western countries (50.3 years)[40]. In the UAE, women are expected to suffer postmenopausal symptoms and complications for around one third of their lives, notwithstanding the extraordinary increase in lifespan[2]. While menopausal symptoms have been previously assessed in the UAE, neuropsychiatric symptoms such as depression, anxiety, memory and sleep problems have received less attention[4].

Similarly, attitudes towards menopause were previously analysed in the UAE[2]. The association between menopausal symptoms and menopause behaviours in the UAE has not yet been evaluated, however. The current research therefore provides in-depth exploration of psychological climatic symptoms and discusses the connection between menopausal symptoms and menopausal attitudes. This research aimed to investigate the direct and indirect effects of vasomotor symptoms and weight gain on psychological symptoms of menopause, based on the aforementioned context. Specifically, we hypothesised that vasomotor symptoms and weight gain lead to sleep loss/difficulty sleeping and exhaustion, which in turn contribute to anxiety and depressive symptoms, psychological distress, and memory problems (Figure 1). The correlation between neuropsychiatric climatic symptoms and other variables reported in the literature to lead to depression has also been investigated, e.g., sexual symptoms, age, menopausal status (perimenopausal vs. postmenopausal), short period after the onset of menopause, level of schooling, smoking,

jobs, marital status, and use of HRT[30,40]. The second goal of the current research was to establish correlates of menopause attitudes. We postulated, in particular, that women with more serious symptoms will favour more negative attitudes towards menopause.

CONCLUSIONS

Vasomotor symptoms and weight gain lead among menopausal women to exhaustion, mood dysregulation, sleep disruption, memory issues, and general distress. The relationship is either direct or mediated by fatigue between these variables. Most menopausal symptoms correlate with negative menopausal attitudes, but only vasomotor symptoms can predict negative menopausal attitudes. In general, these results suggest a widespread psychological distress among menopausal women and highlight a key role of vasomotor symptoms, exhaustion and obesity in the production of psychological distress and negative attitudes towards menopause (only vasomotor symptoms). Special interventions to reduce exhaustion and relieve psychological distress can also be beneficial.

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