REVIEW ARTICLE

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Depression in women in climacteric period: a brief review

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INTRODUCTION

Women have evident and concrete milestones during their lives such as menarche and the last menstrual period, which are related to the menstrual cycle and signalize different phases or periods of life. The image of women is linked to the reproductive phase, as a result of their biological cycle, but it is important to emphasize that the period of transition to menopause and post-reproductive period stand out as population aging is a global reality related to increased life expectancy and decreasing fertility rates, leading to a demographic, social, and economic transition[1].

The Brazilian population over 50 years of age increased from 20.8 million people in 2010 to 30.1 million in 2020, with an estimated increase of more than 1 million annually, reaching 42.1 million in 2030. It is estimated that the female population will exceed 23 million in 2030, and thus a larger number of women will be experiencing the post-reproductive period and its transition, considering that the life expectancy for women in Brazil is 75.6 years[2].

These data are associated with the fact that the magnitude of the consequences for women's lives, such as menopausal symptoms, urinary symptoms, vaginal atrophy, sexual dysfunction, increased risk of cardiovascular disease, and osteoporosis, and the concomitant appearance of psychological manifestations, such as irritability, nervousness, depression, and anxiety, corroborate the classification of this phase of life as a public health problem[3].

The climacteric phase is defined as the period of transition from a woman's reproductive to non-reproductive life and extends from 40 to 65 years of age. It can be divided into two phases: transition to menopause and postmenopause[4].

Menopause is the event that occurs at the end of the transition to menopause, and the milestone for the beginning of postmenopause. It is recognized after 12 months of absence of menstrual cycles associated with permanent and physiological ovarian insufficiency. Worldwide, it occurs around 50 years of age, in Latin America at 47 years of age, and in Brazil between 48 and 50 years of age[5].

Postmenopause starts from the last menstrual period (menopause) and can be divided into early and late. Early postmenopause is defined as the period of 5 years from menopause, where the levels of the follicle-stimulating hormone remain high with a progressive decline of estradiol and greater representation of vasomotor symptoms, mood, and sleep changes. The late phase starts after 5 years and lasts until death with greater repercussions on bone and cardiovascular metabolism[4,6].

With increasing life expectancy, women spend approximately one-third of their lives in menopause. Therefore, the objective of this review was to identify the causes of the disorders that occur in this phase and their impact on the family, to help women increase their motivation and sense of self-efficacy and, consequently, to improve their quality of life as well as educational initiatives in health for this phase of women's lives.

CLIMACTERIC PERIOD AND DEPRESSION

Depression corresponds to a mood disorder, being two times as prevalent in women than in men, manifesting itself through the following symptoms: depressed mood, fatigue, reduced reasoning, decision-making capacity, and physiological manifestations, such as altered sleep, appetite, and sexual interest, in addition to the manifestation of social withdrawal behavior[7].

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During a woman's reproductive period, physiological changes occur that lead to mood swings, which, depending on the frequency and intensity, may be accompanied by the possibility of a diagnosis of depression[8].

Depressive disorders that occur before the climacteric period are called reproductive depression and are associated with endocrine changes rather than psychiatric. This occurs due to hormonal changes, such as in the days before the menstrual period (premenstrual syndrome) or in the weeks after pregnancy as postpartum depression and in the years approaching menopause as climacteric depression[9]; thus, the primary treatment would be hormonal rather than antidepressants.

The menopausal transition is a vulnerable period for the onset of depressive symptoms because women are more prone to depressed moods. Also, perimenopause is accompanied by physiological changes that include vasomotor symptoms, cognitive and metabolic decline, and somatic and psychological changes[3]. These changes are attributed to hormonal fluctuations that act on specific areas in the brain that operate as estrogen receptors that influence mood regulation, core body temperature, and cognitive function[10].

A study of the Center for Epidemiological Studies Depression (CES D) Scale demonstrated high scores in the symptoms of sadness, loss of interest, appetite, sleep, concentration, feeling of guilt, fatigue, agitation, and suicidal ideation. Regarding anxiety, women with both high and low levels of anxiety may feel anxiety and even reach high levels of anxiety during the climacteric period; thus, this period may be critical for women susceptible to depression and anxiety disorders[8].

Depression in perimenopause manifests itself through verbal outbursts, due to minor stress factors resulting from feelings associated with anger, irritability, and paranoia, and such attitude is not something inherent to the character of these women. Together with the psychological symptoms, cognitive declines, such as low concentration, reduced memory, anxiety, nervousness, irritability, low self-esteem, melancholy, and sadness, which are present mainly during the transition to menopause, are pointed out[11]. These may be associated with other symptoms such as depressed mood, hot flashes, fatigue, physical symptoms, use of medication, and other stressors common to women in this phase of life[3].

The literature shows that perimenopause corresponds to the period where mood disorders can appear with a fivefold increase in the risk of the first episode of depression in the transition to menopause. In the pre-menopausal phase, one of the factors to be considered is the past existence of depressive history that can result in changes[8].

During perimenopause and postmenopause, there is a higher risk of the reappearance of major depressive disorder in women with a previous history. The association of the risk profile with health factors and psychological symptoms favors depressive episodes in this period[8].

Furthermore, women who manifest depression during the transition to menopause present a higher risk of developing depression in postmenopause, with increased morbidity and mortality. The National Epidemiological Survey on Alcohol and Related Conditions carried out in the United States identified a risk factor for major depressive disorder at the age of 50 years and a history of previous depression, besides a greater susceptibility to chronic diseases, such as hypertension and diabetes in this period[12].

The overlap of the aging process with prolonged hypoestrogenism aggravates the risk of depression in women in the climacteric period and can double even with no history; this fact is linked to hormonal and psychosocial changes[13].

Thus, depressive episodes can occur during at least one-third of a woman's life cycle. In the climacteric period, the prevalence of these episodes is 9% and may be associated with the fear of aging, feeling of uselessness, affective needs, and unemployment. A depressive mood state added to a history of depression increases 1.5–2.0 times the risk of depression in menopause. Furthermore, women in the climacteric period with no history of depression diagnosis present an odds ratio of 2.50 for major depression[12], with the highest risk of a depressive episode occurring in perimenopause.

Thus, women in climacteric period may report depressed mood during follow-up, with loss of energy, libido, and confidence, and receive antidepressant indications. Professionals ignore the hormonal association of estrogen with the symptoms; this failure can have serious consequences. It should be considered that depressive disorders correspond to the second leading cause of disability throughout life[14], and these are associated with other comorbidities, such as cardiovascular diseases.

The literature demonstrates the positive effects of estrogen therapy in depressed perimenopausal women but no effects in postmenopausal women. Thus, there may be a window of opportunity for the treatment of depressive disorders during perimenopause. Estrogen therapy may benefit perimenopausal women without depression by improving their mood and well-being. Also, when indicated for other menopausal symptoms, it demonstrates an increased clinical response to antidepressants in both perimenopausal and postmenopausal women[15].

Perceived mood swings in the transition to menopause and postmenopause as well as depression are related to an increase in health care utilization and costs, and sick leave[16].

It is important to recognize that women with no family history of depression may be more vulnerable to the effects of

the menopausal transition than women with such a history and that this group of women may benefit from increased monitoring for signs of depression during this period. Even women who have not experienced a depressive episode during the menopausal transition are two to four times more likely to develop a depressive episode during the menopausal transition. Furthermore, there is a threefold greater risk of developing a major depressive episode[17].

Monitoring can lead to early interventions including pharmacological, behavioral, and psychological therapy that can prevent the progression of depressed mood to minor or major depression and is effective at other times in the life cycle. Interventions can also include brief counseling on how to cope with mood changes such as treatment of menopausal symptoms that can exacerbate or worsen depression and are unique to this period in a woman's life, such as vasomotor and genitourinary symptoms and difficulty in sleeping[3,15].

The study by Colvin et al. signals that major depression has a higher chance of being identified in late perimenopausal or postmenopausal women when compared to premenopausal or early perimenopausal women[12], and it is essential to ask and investigate mood swings in this phase of a woman's life. Yet cognitive decline, especially in verbal memory, can be accompanied by problems with organization and planning or concentration at this stage of life impairing the depressive state.

A change in lifestyle and behavior, including regular physical activity and a diet based on fresh and unprocessed foods, favors the reduction of menopausal symptoms and depressive symptoms, consequently improving the quality of health and quality of life as protective factors[18].

PREDICTORS FOR DEPRESSION DURING THE CLIMACTERIC PERIOD

Cultural factors, lifestyle, and sociodemographic aspects influence the quality of life of women in the climacteric period. Women with more anxiety traits, higher mean private self-consciousness, and lower mean optimism are more likely to develop anxiety disorder throughout life. Also, factors such as two or more medical conditions and prior use of psychotropic medications increase a woman's propensity to develop major depressive disorder over her lifetime[19].

In menopause, the increase in vasomotor symptoms and sleep disorders potentiate depression that can affect cognitive function, difficulty in sleeping, reduced quality of sleep with advancing age, in addition to climacteric symptoms from moderate to intense, and others such as the presence of arthritis, arthrosis, and/or rheumatism. Sleep problems, in turn, interfere with the cognitive function of women, such as attention, executive function, and episodic memory[6,10,20].

The Women's Healthy Aging Project (WHAP) identified that women around the age of 50 years who have negative attitudes toward aging, negative attitudes toward menopause, negative mood scores, and previous premenstrual complaints are susceptible to higher depressive symptom scores when they reach the age of 60 years[8].

Factors such as alcohol consumption, a sedentary lifestyle, and living without a partner can negatively impact emotion and mood in postmenopausal women. Barghandan et al.[19] demonstrated that the older the postmenopausal women are and the lower their level of physical activity, the more likely they are to develop depression[19].

CLOSING COMMENTS

The occurrence of menopause is a "window of vulnerability" for depression, as hypoestrogenism is associated with changes in neurotransmitter metabolism. The identification of risk predictors for the development of depressive symptoms such as previous depression will favor early behavioral and clinical therapeutic intervention.

The strategy of treating vasomotor symptoms, sleep disturbances, and urogenital symptoms ameliorates and positively impacts mood and cognition symptoms. Thus, it is important to extend knowledge, so that women can seek monitoring and develop coping strategies through lifestyle changes, including healthy habits.

There are controversies about the factors associated with the onset of mood swings, along with the high cost of treatment and the social and family repercussions associated with depression and anxiety. It is important to have a multidisciplinary team intervention taking advantage of a possible window of opportunity to monitor women in the climacteric period where prevention and early diagnosis can guide individualized and holistic treatment.

AUTHORS' CONTRIBUTIONS

JZR: Conceptualization, Writing – original draft, Writing – review & editing. **ICES:** Conceptualization, Writing – original draft, Writing – review & editing. **CMPR:** Writing – original draft. PCLB: Writing – original draft. **LMPRC:** Writing – original draft. **ECB:** Writing – original draft. **JMSJ** Conceptualization, Supervision, Writing – original draft, Writing – review & editing. **RDR:** Conceptualization, Supervision, Writing – original draft, Writing – review & editing.

REFERENCES

1. Salomon JA, Wang H, Freeman MK, Vos T, Flaxman AD, Lopez AD, et al. Healthy life expectancy for 187 countries, 1990-2010: a systematic analysis for the global burden disease study 2010. Lancet. 2012;380(9859):2144-62. https://doi.org/10.1016/S0140-6736(12)61690-0
2. IBGE. Tábua completa de mortalidade para o Brasil: análises e tabelas [Internet]. 2020 [cited on Jan 29, 2022]. p. 28. Available from: https://agenciadenoticias.ibge.gov.br/media/com_mediaibge/arquivos/65c3023462edaabf0d7318c1a0f80ca4.pdf
3. Monteleone P, Mascagni G, Giannini A, Genazzani AR, Simoncini T. Symptoms of menopause - global prevalence, physiology and implications. Nat Rev Endocrinol. 2018;14(4):199-215. https://doi.org/10.1038/nrendo.2017.180
4. Sorpreso IC, Soares Júnior JM, Fonseca AM, Baracat EC. Female aging. Rev Assoc Med Bras. 2015;61(6):553-6. https://doi.org/10.1590/1806-9282.61.06.553
5. Bagnoli VR, Fonseca AM, Arie WM, Das Neves EM, Azevedo RS, Sorpreso IC, et al. Metabolic disorder and obesity in 5027 Brazilian postmenopausal women. Gynecol Endocrinol. 2014;30(10):717-20. https://doi.org/10.3109/09513590.2014.925869
6. Lima AM, Rocha JSB, Reis VMCP, Silveira MF, Caldeira AP, Freitas RF, et al. Loss of quality of sleep and associated factors among menopausal women. Cien Saude Colet. 2019;24(7):2667-78. https://doi.org/10.1590/1413-81232018247.19522017
7. Del Porto JA. Conceito e diagnóstico. Brazilian J Psychiatry [Internet]. 1999;21(1):06-11. Available from: https://www.scielo.br/j/rbp/a/dwLyt3cv3ZKmKMLXv75Tbxn/?lang=pt
8. Campbell KE, Gorelik A, Szoeke CE, Dennerstein L. Mid-life predictors of late-life depressive symptoms; determining risk factors spanning two decades in the women's heathy ageing project. Womens Midlife Health. 2020;6:2. https://doi.org/10.1186/s40695-020-00050-3
9. Studd J. Personal view: hormones and depression in women. Climacteric. 2015;18(1):3-5. https://doi.org/10.3109/13697137.2014.918595
10. Zangirolami-Raimundo J, Raimundo RD, Silva Noll PRE, Dos Santos WS, Leone C, Baracat EC, et al. Postmenopausal women's cognitive function and performance of virtual reality tasks. Climacteric. 2023. https://doi.org/10.1080/13697137.2023.2190511
11. Lui-Filho JF, Pedro AO, Baccaro LF, Costa-Paiva L. Risk factors associated with intensity of climacteric symptoms in Brazilian middle-aged women: a population-based household survey. Menopause. 2018;25(4):415-22. https://doi.org/10.1097/GME.0000000000001022
12. Colvin A, Richardson GA, Cyranowski JM, Youk A, Bromberger JT. The role of family history of depression and the menopausal transition in the development of major depression in midlife women: study of women's health across the nation mental health study (SWAN MHS). Depress Anxiety. 2017;34(9):826-35. https://doi.org/10.1002/da.22651
13. Soares CN. Depression and menopause: current knowledge and clinical recommendations for a critical window. Psychiatr Clin North Am. 2017;40(2):239-54. https://doi.org/10.1016/j.psc.2017.01.007
14. Wang ZJ, Guo M, Si TM, Jiang MM, Liu SM, Liu YY, et al. Association of depression with adverse cardiovascular events after percutaneous coronary intervention. Coron Artery Dis. 2013;24(7):589-95. https://doi.org/10.1097/MCA.0b013e3283650234
15. The 2022 hormone therapy position statement of The North American Menopause Society. The 2022 hormone therapy position statement of the North American menopause society. Menopause. 2022;29(7):767-94. https://doi.org/10.1097/GME.0000000000002028
16. Kleinman NL, Rohrbacker NJ, Bushmakin AG, Whiteley J, Lynch WD, Shah SN. Direct and indirect costs of women diagnosed with menopause symptoms. J Occup Environ Med. 2013;55(4):465-70. https://doi.org/10.1097/JOM.0b013e3182820515
17. Kravitz HM, Schott LL, Joffe H, Cyranowski JM, Bromberger JT. Do anxiety symptoms predict major depressive disorder in midlife women? the study of women's health across the nation (SWAN) mental health study (MHS). Psychol Med. 2014;44(12):2593-602. https://doi.org/10.1017/S0033291714000075
18. Noll PRES, Noll M, Zangirolami-Raimundo J, Baracat EC, Louzada MLDC, Soares Júnior JM, et al. Life habits of postmenopausal women: association of menopause symptom intensity and food consumption by degree of food processing. Maturitas. 2022;156:1-11. https://doi.org/10.1016/j.maturitas.2021.10.015
19. Barghandan N, Dolatkhah N, Eslamian F, Ghafarifar N, Hashemian M. Association of depression, anxiety and menopausal-related symptoms with demographic, anthropometric and body composition indices in healthy postmenopausal women. BMC Womens Health. 2021;21(1):192. https://doi.org/10.1186/s12905-021-01338-w
20. Paula Rebouças CM, Ribeiro MR, Zangilorami-Raimundo J, Lima Bezerra PC, das Chagas Souza Júnior AM, Silva Souza N, et al. Association between sleep quality and depression among institutionalized and community older people - Brazilian Western Amazonia. BMC Psychiatry. 2021;21(1):367. https://doi.org/10.1186/s12888-021-03368-y