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IMPACT OF CLIMACTERIC HORMONAL CHANGES IN MENTAL HEALTH

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Abstract: The climacteric is a natural phase in a woman's life that marks the transition between the reproductive and non-reproductive periods. In view of this, the aim of this work is to develop a study on the main impacts of the hormonal changes of the climacteric on women's mental health. The methodology applied is based on a literature review, in which health databases were used that contributed to the development of the research. The results show that the studies analyzed in this review demonstrate that there is a complex interrelationship between the hormonal, psychological and social aspects experienced by women during this phase. The impact of hormonal changes on mental health cannot be overlooked, as it compromises quality of life and emotional well-being. In conclusion, it is essential that health professionals, especially gynecologists, endocrinologists and psychiatrists, are aware of the need for multidisciplinary approaches to properly manage these symptoms. Treatment can include hormone therapy, psychological interventions and lifestyle changes, with the aim of minimizing the negative impacts of the climacteric on women's mental health.

Keywords: Climacteric. Mental Health. Hormone therapy.

INTRODUCTION

The climacteric is a natural phase in a woman's life that marks the transition between the reproductive and non-reproductive periods. This phase is characterized by significant physiological changes, mainly due to the progressive decrease in the production of sex hormones such as oestrogen and progesterone. These hormonal changes have a direct impact on mental health and can trigger or worsen psychological and emotional disorders (Tissiani *et al.*, 2025).

During the climacteric, the ovary gradually reduces its hormone production, leading

to fluctuations in estrogen and progesterone levels. Estrogen plays a fundamental role in mood regulation, as it influences the production of neurotransmitters such as serotonin and dopamine (Alves; Martins, 2021).

The drop in levels of this hormone can contribute to symptoms of depression, anxiety and irritability. In addition, progesterone, which has a calming effect on the central nervous system, is also reduced, which can increase feelings of tension and insomnia (Costa; Pereira, 2020).

With regard to psychological and emotional impacts, there is the example of depression, which is a disease that can be caused by reduced estrogen levels. Studies indicate that women in the climacteric period are more likely to develop depressive symptoms, especially those who have a history of previous depression (Cardoso; Fernandes, 2020).

Anxiety and irritability are also part of this context, as hormonal fluctuations can increase feelings of anxiety and nervousness. In addition, physical symptoms of the climacteric, such as hot flushes and night sweats, can aggravate anxiety and impair emotional well-being (Tissiani *et al.*, 2025).

Although hormonal changes are inevitable, there are various strategies to minimize their impact on mental health, such as Hormone Replacement Therapy (HRT), since in some cases, HRT can be recommended to relieve psychological and physical symptoms. However, its use should be assessed by a health professional.

Other strategies are linked to physical exercise, since regular physical activity helps to reduce the symptoms of anxiety and depression, as well as improving sleep quality, as well as a healthy diet, not least because a balanced diet, rich in antioxidants and essential nutrients, can contribute to emotional stability (Cardoso; Fernandes, 2020).

It is therefore very important to follow up with psychologists and therapists to help cope with physical changes, sometimes in the family

structure (separations, empty nest syndrome, etc.), as well as the use of meditation and relaxation techniques, as practices such as yoga and mindfulness can help control anxiety and improve well-being (Costa; Pereira, 2020).

In view of this, the aim of this work is to develop a study on the main impacts of the hormonal changes of the climacteric period on women's mental health

The research is therefore justified on the grounds of its relevance, given that the climacteric period is a time of major transformations in the female body, and the impacts of hormonal changes on mental health are significant. However, with proper medical monitoring and the adoption of healthy habits, it is possible to minimize these effects and ensure quality of life. Thus, psychological support and self-care play fundamental roles in ensuring that this phase is lived in a more balanced and healthy way.

METHODOLOGY

This work consists of a narrative literature review, with the aim of gathering and analyzing scientific studies that address the impact of climacteric hormonal changes on mental health. The research was carried out in scientific databases such as PubMed, Scielo, Lilacs and ScienceDirect. Articles published in the last five years were selected in order to ensure that the information was up-to-date, but without excluding classic references that are fundamental to the subject.

Studies were included if they: Address the relationship between climacteric hormonal changes and mental health; are original articles, systematic reviews or meta-analyses; and publications that are available in Portuguese, English or Spanish. Studies that do not directly address the relationship between climacteric and mental health; are single case articles, conference abstracts or articles without peer review; and publications that are unavailable in full were excluded.

The articles were analyzed through exploratory, selective, analytical and interpretative reading. As this is a literature review, it was not necessary to submit the study to a research ethics committee. However, all the sources used will be duly cited, guaranteeing the academic integrity of the work.

Therefore, the results were presented descriptively, grouping the treatments evaluated and their effects on improving serum iron and ferritin levels, through 8 selected articles.

RESULTS AND DISCUSSION

The hormonal changes that occur during the climacteric period have a significant impact on women's health. The progressive reduction in oestrogen and progesterone affects the functioning of various systems in the body, leading to a series of physiological changes (Mendonça et al., 2024). In the reproductive system, the decrease in hormone production over time leads to thinning of the endometrium, vaginal atrophy and a reduction in lubrication, which can result in dryness and discomfort during sexual intercourse (Ferraz; Oliveira, 2019).

In the nervous system, as described by Souza and Pereira (2020), this hormonal drop influences the production of neurotransmitters such as serotonin and dopamine, triggering mood swings, irritability, anxiety and an increased risk of depression. In addition, the dysregulation of the hypothalamic thermoregulatory center caused by the decrease in estrogen levels causes hot flushes and night sweats, which are characteristic symptoms of this phase.

Araújo et al. (2022) point out that metabolism and body composition are also significantly altered. The climacteric period is related to an increase in abdominal fat and loss of muscle mass, factors which slow down metabolism and favor weight gain.

In relation to the cardiovascular system, Gonçalves and Silva (2020) point out that oestrogen deficiency increases the risk of conditions such as hypertension and atherosclerosis.

rosis, since oestrogen plays a protective role over blood vessels. At the same time, the accelerated loss of bone mass after the menopause increases the chances of developing osteoporosis and suffering fractures, making it crucial to monitor bone density and adopt healthy habits to preserve bone health.

The climacteric is therefore a period of intense transformation that can have a significant impact on a woman's quality of life. Understanding these changes and implementing appropriate preventive and therapeutic measures are essential steps to ensure healthy and balanced ageing (Botelho et al., 2022).

According to De Sousa et al. (2021), the climacteric is not limited to physical changes; it can also cause profound emotional transformations, directly affecting both the emotional and physical aspects of a woman's life.

Almeida and Cavalcante (2020) add that this phase is usually accompanied by psychological challenges such as anxiety, depression and irritability. The intensity of these symptoms varies according to individual factors, such as genetic predisposition, history of psychiatric disorders, socioeconomic conditions and access to emotional support.

Among the predominant emotional symptoms is anxiety, marked by excessive worry, a constant feeling of tension and difficulty relaxing. Many women report episodes of palpitation, insomnia and racing thoughts, often exacerbated by fear of the bodily changes and aging associated with the climacteric (Martins; Ribeiro, 2021).

Depression is also a common occurrence during this period, characterized by persistent sadness, lack of interest in previously pleasurable activities, intense fatigue and low self-esteem. Studies such as those carried out by Santos and Costa (2020) indicate that women with a previous history of depression are more vulnerable to developing this condition during the transition.

In addition, irritability recurs, manifesting itself as sudden mood swings, impatience and difficulties in interpersonal relationships. These emotional changes are directly linked to the hormonal fluctuations characteristic of the climacteric.

As Almeida and Cavalcante (2020) explain, the drop in estrogen and progesterone levels interferes with the regulation of neurotransmitters that are fundamental to emotional balance, such as serotonin, dopamine and noradrenaline. The reduction in serotonin compromises the regulation of mood and anxiety, contributing to depressive episodes and bouts of irritability. Similarly, a decrease in dopamine affects motivation and feelings of pleasure, leading to apathy and lack of energy (Martins; Ribeiro, 2021).

These hormonal impacts on mental health can be aggravated by external factors such as occupational stress, family overload or changes in social dynamics. In addition, cultural patterns related to female aging often generate insecurity and low self-esteem, further intensifying emotional symptoms (Andrade et al., 2024).

The study by Santos and Costa (2020) revealed that it is essential to provide women with adequate support during the climacteric period. This support can include psychological counseling, alternative therapies or the adoption of lifestyle changes that promote emotional balance.

The psychological aspects of this phase should not be neglected, and making women aware of the transformations that occur, as well as encouraging them to seek effective strategies to deal with emotional challenges, is fundamental for a more balanced and healthy transition, as pointed out by Ferreira *et al.* (2024).

The psychosomatic symptoms of the climacteric are one of the biggest obstacles to women's health during this period, due to the intense interaction between physical and emotional impacts. Among the most recurrent are hot flashes, which manifest as sud-

den episodes of intense heat accompanied by sweating and palpitations. These episodes can occur several times a day, directly interfering with daily activities (Ferreira *et al.*, 2024).

Pereira and Mendes (2020) observed that sleep disorders, such as insomnia and constant awakenings, are quite prevalent during the climacteric period. These problems are often exacerbated by the anxiety characteristic of this phase. The lack of restful sleep negatively affects physical and mental well-being, causing fatigue, irritability and cognitive difficulties such as memory lapses and inability to concentrate. The connection between physical symptoms and the psychological state of women during the climacteric is complex.

Significant physical discomfort can aggravate the emotional state, especially in cases of intense and frequent heat waves. These episodes can generate social embarrassment, insecurity and even lead to isolation, directly impacting self-esteem and quality of life (Caldeira *et al.*, 2020).

Lima and Silveira (2021) pointed out that insomnia is closely linked to an increased risk of depression and anxiety, since sleep deprivation impairs the regulation of neurotransmitters that are essential for emotional balance. In addition, symptoms such as chronic fatigue, muscle pain and headaches can be mistakenly associated with other medical conditions, aggravating worries and raising stress levels. To deal with the emotional challenges of this phase, different psychotherapeutic approaches have proved effective.

Cognitive-behavioral therapy, according to Silva and Gomes (2020), is widely used to support women in restructuring negative thoughts, reducing anxiety and coping better with physical symptoms.

In addition, Costa and Pereira (2020) observed that group therapy provides a welcoming space for sharing experiences, strengthening support networks. Social and family support is also essential, helping to reduce isolation and increase the feeling of emotional security.

Therefore, the climacteric has a profound impact on women's mental health, although it is often underestimated. The hormonal reduction observed during this period is directly related to the increased incidence of psychological disorders such as anxiety, depression and cognitive decline. However, psychosocial factors also play a significant role in this dynamic, making the management of this phase even more challenging (Oliveira; Gonçalves, 2021).

CONCLUSION

The climacteric period is a phase of intense physiological and psychological changes in a woman's life, with hormonal changes being one of the main factors triggering impacts on mental health. The reduction in oestrogen and progesterone levels directly influences the functioning of the central nervous system and can lead to the development or worsening of disorders such as depression, anxiety and insomnia.

The studies analyzed in this review show that there is a complex interrelationship between the hormonal, psychological and social aspects experienced by women during this phase. The impact of hormonal changes on mental health cannot be overlooked, as it compromises quality of life and emotional well-being.

This makes it essential for health professionals, especially gynecologists, endocrinologists and psychiatrists, to be aware of the need for multidisciplinary approaches to properly manage these symptoms. Treatment can include hormone therapy, psychological interventions and lifestyle changes, with the aim of minimizing the negative impacts of the climacteric on women's mental health.

Finally, this study reinforces the importance of more research on the subject in order to increase knowledge about the best prevention and treatment strategies, ensuring a better quality of life for women during this phase of biological transition.

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