



MEDICINAL PLANTS IN THE PROMOTION OF QUALITY SLEEP AND THE IMPROVEMENT OF HEALTH AND WELL-BEING

PLANTAS MEDICINAIS NA PROMOÇÃO DO SONO DE QUALIDADE E MELHORIA DA SAÚDE E DO BEM-ESTAR

PLANTAS MEDICINALES EN LA PROMOCIÓN DEL SUEÑO DE CALIDAD Y LA MEJORA DE LA SALUD Y EL BIENESTAR



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Ivone Caroline Carvalho Costa de Souza¹, Pâmela Cardoso Pereira Rocha²,
Andressa Cardoso Guimarães³, Elaine de Oliveira⁴

ABSTRACT

Sleep is a fundamental pillar of health, essential for tissue repair, emotional regulation, and metabolic balance. Sleep deprivation, a common problem in contemporary society, is associated with increased risks of obesity, diabetes, cardiovascular diseases, and mental disorders. The circadian rhythm, primarily regulated by light, orchestrates this process, and its disruption by modern lifestyle habits compromises health. Given this complexity, an integrative approach that considers the individual as a whole has gained relevance. In Brazil, the National Policy on Integrative and Complementary Practices (PNPIC) incorporates therapies such as phytotherapy, integrating scientific and traditional knowledge. Medicinal plants such as chamomile, passionflower, lemon balm, and mulungu emerge as allies in improving sleep quality, with scientifically studied mechanisms of action that modulate the GABAergic system (a calming neurotransmitter) and cortisol (the stress hormone). Scientific evidence supports the safe and effective use of these plants in the form of teas (infusions or decoctions), with specific preparation methods and precautions. However, it is important to emphasize that phytotherapy is a complementary intervention and does not replace medical evaluation. Its use should be integrated into conscious lifestyle changes, including regular schedules, exposure to natural light, and stress management, always under professional guidance. Thus, reconciling science and traditional wisdom through the simplicity of tea consumption can become a therapeutic ritual for reconnecting with the natural cycles of life and promoting restorative sleep.

Keywords: Insomnia. Sleep Quality. Phytotherapy. Medicinal Plants and Integrative Health.

¹ Graduated in Nutrition. Universidade do Estado do Rio de Janeiro (UERJ).

E-mail: carolnutricionistauerj@gmail.com Lattes: <https://lattes.cnpq.br/8669179222691754>

² Graduated in Nutrition. Universidade do Estado do Rio de Janeiro (UERJ).

E-mail: pamelacaardoso@gmail.com

³ Dr. in Clinical and Experimental Pathophysiology. Universidade do Estado do Rio de Janeiro (UERJ).

E-mail: andressaguimaraesrj@gmail.com Orcid: <https://orcid.org/0000-0001-7566-474X>

Lattes: <http://lattes.cnpq.br/4036520638529740>

⁴ Professor. Universidade do Estado do Rio de Janeiro (UERJ). E-mail: elainedeoliveir@yahoo.com.br

Orcid: <https://orcid.org/0000-0002-8688-9183> Lattes: <http://lattes.cnpq.br/7322797152004960>

RESUMO

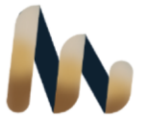
O sono é um pilar fundamental da saúde, essencial para a reparação de tecidos, regulação emocional e equilíbrio metabólico. Sua privação, um problema comum nos dias atuais, está associada a riscos aumentados de obesidade, diabetes, doenças cardiovasculares e transtornos mentais. O ritmo circadiano, regido principalmente pela luz, orquestra esse processo, e sua desregulação por hábitos da vida moderna compromete a saúde. Diante dessa complexidade, a abordagem integrativa, que considera o indivíduo na sua totalidade, ganha relevância. No Brasil, a Política Nacional de Práticas Integrativas e Complementares (PNPIC) incorpora terapias como a fitoterapia, unindo o conhecimento científico e o tradicional. Plantas medicinais como camomila, maracujá, erva-cidreira e mulungu emergem como aliadas para melhor qualidade do sono, com mecanismos de ação cientificamente estudados, modulando o sistema GABAérgico (neurotransmissor calmante) e o cortisol (hormônio do estresse). Evidências científicas sustentam o uso seguro e eficaz dessas plantas na forma de chá (infusões ou decocções), com preparo e cuidados específicos. No entanto, é importante ressaltar que a fitoterapia é uma intervenção complementar e não substitui a avaliação médica. Seu uso deve integrar uma mudança consciente no estilo de vida, com horários regulares, exposição à luz natural e manejo do estresse, sempre sob orientação profissional. Assim, reconciliar ciência e sabedoria tradicional através da simplicidade do uso de um chá pode ser um ritual terapêutico para reconexão com os ciclos naturais da vida e promover um sono reparador.

Palavras-chave: Insônia. Qualidade do Sono. Fitoterapia. Plantas Medicinais e Saúde Integrativa.

RESUMEN

El sueño es un pilar fundamental de la salud, esencial para la reparación de tejidos, la regulación emocional y el equilibrio metabólico. Su privación, un problema común en la actualidad, se asocia con un mayor riesgo de obesidad, diabetes, enfermedades cardiovasculares y trastornos mentales. El ritmo circadiano, regulado principalmente por la luz, orquesta este proceso, y su desregulación por los hábitos de la vida moderna compromete la salud. Ante esta complejidad, la aproximación integrativa, que considera al individuo en su totalidad, ha cobrado relevancia. En Brasil, la Política Nacional de Prácticas Integrativas y Complementarias (PNPIC) incorpora terapias como la fitoterapia, integrando el conocimiento científico y el tradicional. Plantas medicinales como la manzanilla, la pasiflora, la melisa y el mulungu emergen como aliadas para mejorar la calidad del sueño, con mecanismos de acción científicamente estudiados que modulan el sistema GABAérgico (neurotransmisor calmante) y el cortisol (hormona del estrés). La evidencia científica respalda el uso seguro y eficaz de estas plantas en forma de infusiones o decocciones, con métodos de preparación y cuidados específicos. No obstante, es importante destacar que la fitoterapia es una intervención complementaria y no sustituye la evaluación médica. Su uso debe integrarse a cambios conscientes en el estilo de vida, como horarios regulares, exposición a la luz natural y manejo del estrés, siempre bajo orientación profesional. De este modo, reconciliar la ciencia y la sabiduría tradicional a través de la simplicidad del consumo de una infusión puede convertirse en un ritual terapéutico para la reconexión con los ciclos naturales de la vida y la promoción de un sueño reparador.

Palabras clave: Insomnio. Calidad del Sueño. Fitoterapia. Plantas Medicinales y Salud Integrativa.



1 INTRODUCTION

Nightfall brings with it more than the simple absence of light. It is an invitation to rest, a time when the body and mind demand a break for their regeneration. Quality sleep is not a luxury, but a fundamental building block of human health. While we sleep, our body performs a complex symphony of repair: it consolidates memories, regulates emotions, strengthens defenses, and balances our metabolism. A good night's sleep offers us more than rest, it offers resilience.

However, for many people, the moment of rest turns into a daily challenge. Insomnia, fragmented sleep and restlessness are silent companions of a significant portion of the population. The consequences go far beyond tiredness when you wake up. The scientific literature shows us that sleep deprivation is the common thread for a cascade of events with serious consequences for health: from increased appetite for high-calorie foods and a greater predisposition to weight gain, to a high risk for the development of diabetes, cardiovascular diseases, and disorders such as anxiety and depression.

At the heart of this process is the circadian rhythm, a kind of master biological clock that synchronizes our functions with the solar cycle. This clock, regulated by a small structure in the brain called the suprachiasmatic nucleus, controls the time of production of the different hormones, involved in the digestion, absorption and use of food by the body, alertness and, of course, the process of falling asleep. Light is its main ruler. When we ignore its signals, whether due to nighttime exposure to bright screens, irregular schedules, night shifts, or chronic stress, this entire system becomes dysregulated.

The result is a dysregulated organism, with profound damage to integral health. Since scientifically, insufficient sleep is associated with increased activation of the sympathetic nervous system and oxidative stress, which contribute to the development of hypertension and systemic inflammation. In the long term, these changes increase the risk of cardiovascular disease. There is also an increase in chronic cortisol levels, exacerbating inflammatory processes. This imbalance may be one of the factors underlying the increased risk of obesity and other metabolic conditions in sleep-deprived individuals. In addition, improper cortisol regulation impairs the functioning of the immune system, increasing vulnerability to infections and reducing the body's ability to respond appropriately to metabolic injury or insults.

2 INTEGRAL HEALTH: CARING FOR THE PERSON AND NOT JUST THE DISEASE

Given the complexity of this relationship between sleep, metabolism, and well-being, the need arises for an equally comprehensive care approach: integrative health. More than a



set of techniques, it is a proposal that sees the person in their totality, physical, emotional, mental and even spiritual, seeking to unite the best of conventional medicine with safe complementary therapies backed by scientific evidence.

In Brazil, this vision gained more space and strength with the creation of the National Policy for Integrative and Complementary Practices (PNPIC), which, since 2006, has incorporated therapies based on traditional medicines, such as phytotherapy, into the Unified Health System (SUS). The initiative seeks to expand the number of therapeutic options offered, value traditional knowledge and promote more humanized and accessible care. Within this context, phytotherapy, which is the use of medicinal plants for the prevention and/or treatment of diseases, stands out as a powerful and close ally of popular culture for reconnecting with restful sleep.

3 SCIENCE AND THE FOLK WISDOM OF HERBS

Imagine combining the scientific understanding of sleep and circadian rhythm with the age-old tradition of brewing a soothing tea at the end of the day. This is the basis of the therapeutic proposal proposed here. Plants such as chamomile (*Matricaria recutita*), lemongrass (*Cymbopogon citratus*), passion fruit (*Passiflora incarnata*), lemon balm (*Melissa officinalis*) and the mulungu (*Erythrina mulungu*) are not just "home remedies", but therapeutic resources whose effects are beginning to be deciphered and validated by scientific research.

Many of these plants act by modulating our central nervous system. One of the most studied mechanisms is the interaction with the GABAergic system. GABA is our main "calming" neurotransmitter. It works as a natural brake, reducing neuronal arousal and promoting relaxation. Some compounds present in these herbs, such as the apigenin in chamomile or the valerenic acid in valerian (*Valeriana officinalis*), can enhance the action of GABA, helping the mind to slow down and preparing the body to enter the state of sleep.

Other plants, such as lemon balm (*Melissa officinalis*), also seem to act on the modulation of cortisol, the stress hormone. By contributing to a more balanced profile of this hormone, they help not only to induce sleep, but to improve its quality, reduce stress and improve metabolism.

4 FROM THEORY TO TEACUP

Based on an extensive review of the scientific literature, which analyzed dozens of studies published in the last 10 years in databases such as PubMed and SciELO, it was



possible to gather evidence and practical guidance on some of the most promising and safe plants to aid sleep:

- Chamomile (*Matricaria chamomilla*): Its tranquilizing effect is mainly linked to apigenin. Studies with the elderly and postpartum women have shown improvement in sleep quality and latency (time to fall asleep). Preparation: Infusion with 2-3 teaspoons of dried flowers in hot water (not boiling) for 5 minutes, strain and use within 24 h. Consume 30 minutes before bedtime.

Attention: It can potentiate the action of anticoagulants, so in case of chronic use of medications, the doctor should be notified.

- Passion fruit (*Passiflora incarnata*): Rich in flavonoids, it acts by inhibiting enzymes that degrade neurotransmitters and modulating GABA receptors. Research points to a reduction in nighttime awakenings and improved sleep efficiency. Preparation: Infusion of 2 teaspoons of dried leaves in 200 ml of boiling water for 10 minutes, strain and use within 24 h. Consume 30 minutes before bedtime.

Attention: Contraindicated for pregnant women.

- Lemon Balm (*Melissa officinalis*): Its essential oils, such as citral, promote increased GABAergic activity, generating a calming and anxiolytic effect. Preparation: Infusion of 1 tablespoon of dried leaves per 200 ml of water, for 5-10 minutes, strain and use within 24 h. Consume 30 minutes before bedtime.
- Mulungu (*Erythrina mulungu*): Traditional in folk medicine, its alkaloids have a sedative and anxiolytic action proven in experimental models. Preparation: Decoction (boiling) of 4 g of the dried peel in 200 ml of water for 15 minutes. Strain and consume warm, 30 minutes before bedtime.

5 A PATH OF CARE AND RESPONSIBILITY

Science and common sense are essential when it comes to self-care. Teas and infusions are powerful complementary interventions for mild to moderate cases of anxiety and insomnia, but they are not a substitute for careful medical evaluation. Herbal medicines should be part of a conscious lifestyle change that prioritizes regular schedules, physical activity, daily exposure to natural light, a balanced diet, and stress management.

And, in this process, professional guidance is indispensable and fundamental. Trained nutritionists, pharmacists and doctors can help choose the appropriate plant for each individual, indicate the safe dosage and advise on the appropriate preparation method, considering drug interactions and specific health conditions, such as pregnancy.



6 RECONNECTING WITH THE NATURAL RHYTHM OF LIFE

Promoting quality sleep is reconnecting with the cycles of nature and incorporating the therapeutic use of medicinal plants to assist in this process has scientific backing. By offering a natural, accessible alternative that empowers the individual in their self-care, phytotherapy invites us to recover not only sleep, but a more harmonious and conscious relationship with our health as a whole.

Traditional wisdom, now revisited and validated through the lens of science, can create a ritual of care and respect for the needs of one's own body. In the stillness of the night, the simple act of having a cup of tea can be the first step to rescue inner silence and allow the meeting between body and mind, so that they finally have the rest they deserve.

REFERENCES

- Adib-Hajbaghery, M., & Mousavi, S. N. (2017). The effects of chamomile extract on sleep quality among elderly people: A clinical trial. *Complementary Therapies in Medicine*, 35, 109–114.
- Aires, L. M. (2018). Estudo sobre o uso de plantas medicinais e regulação do cortisol.
- Almeida, V. R. (2019). Efeitos de plantas medicinais na qualidade do sono.
- American Heart Association. (n.d.). Recomendações para a qualidade do sono. <https://www.heart.org/en/healthy-living/healthy-lifestyle/sleep>
- Borrás, S., Martínez-Solís, I., & Ríos, J. L. (2021). Medicinal plants for insomnia related to anxiety: An updated review. *Planta Medica*, 87(10), 738–753. <https://doi.org/10.1055/a-1510-9826>
- Brasil. Agência Nacional de Vigilância Sanitária. (2024). *Farmacopeia brasileira* (7ª ed.). Anvisa.
- Brasil. Agência Nacional de Vigilância Sanitária. (2016). *Memento fitoterápico da Farmacopeia Brasileira* (Resolução da Diretoria Colegiada – RDC nº 84, de 17 de junho de 2016). <http://www.anvisa.gov.br>
- Brasil. Agência Nacional de Vigilância Sanitária. (2010). Resolução RDC nº 10, de 09 de março de 2010. <http://www.anvisa.gov.br>
- Brasil. Agência Nacional de Vigilância Sanitária. (2014). Instrução Normativa nº 02, de 13 de maio de 2014. <http://portalsaude.saude.gov.br/>
- Brasil. Ministério da Saúde. (2006). *Política Nacional de Práticas Integrativas e Complementares no SUS: PNPIC – Atitude de ampliação de acesso*. Ministério da Saúde.
- Camomila, M., Maracujá, P., Erva Cidreira, M., et al. (2024). *Fitoterapia e qualidade do sono: Evidências e aplicações práticas*. Editora Saúde Integrativa.
- Chang, S. M., & Chen, C. H. (2016). Effects of an intervention with drinking chamomile tea on sleep quality and depression in sleep-disturbed postnatal women: A randomized controlled trial. *Journal of Advanced Nursing*, 72, 306–315.

- Clark, I., & Landolt, H. P. (2017). Coffee, caffeine, and sleep: A systematic review of epidemiological studies and randomized controlled trials. *Sleep Medicine Reviews*, 31, 70–78.
- Feizi, F., et al. (2019). Medicinal plants for management of insomnia: A systematic review of animal and human studies. *Galen Medical Journal*, 8, Article e1085. <https://doi.org/10.31661/gmj.v8i0.1085>
- Flausino Júnior, N., et al. (2007). Estudo da toxicidade do mulungu (*Erythrina mulungu*).
- Guadagna, S., et al. (2020). Plant extracts for sleep disturbances: A systematic review. *Evidence-Based Complementary and Alternative Medicine*, 2020, 1–9.
- Janda, L., et al. (2020). Consumo regular de *Passiflora incarnata* e estabilidade glicêmica em adultos.
- Jensen, M. G., et al. (2024). Herbal medicines and botanicals for managing insomnia, stress, anxiety, and depression: A critical review. *PharmaNutrition*, 29, Article 100399. <https://doi.org/10.1016/j.phanu.2024.100399>
- Keefe, J. R., et al. (2016). Short-term open-label chamomile (*Matricaria chamomilla* L.) therapy of moderate to severe generalized anxiety disorder. *Phytomedicine*, 23, 1699–1705.
- Keefe, J. R., et al. (2018). An exploratory study of salivary cortisol changes during chamomile extract therapy of moderate to severe generalized anxiety disorder. *Journal of Psychiatric Research*, 96, 189–195.
- Lee, S. H., et al. (2020). Clinical evaluation of *Passiflora incarnata* for sleep disorders.
- Lima, M. P., et al. (2015). Segurança do uso de *Cymbopogon citratus* em gestantes: Revisão integrativa.
- Miroddi, M., et al. (2013). *Passiflora incarnata* L.: Ethnopharmacology, clinical application, safety and evaluation of clinical trials. *Journal of Ethnopharmacology*, 150(3), 791–804.
- Nascimento, D. F., et al. (2009). Estudo de toxicologia clínica de um fitoterápico contendo *Passiflora incarnata* L., *Crataegus oxyacantha* L., *Salix alba* L. em voluntários saudáveis. *Revista Brasileira de Farmacognosia*, 19(1B), 261–268.
- National Sleep Foundation. (n.d.). Guia de práticas para sono saudável. <https://www.sleepfoundation.org/sleep-hygiene>
- Ochoa-de la Paz, L., et al. (2021). Efeitos do GABA na modulação do sono.
- Onusic, G. M., et al. (2003). Estudos farmacológicos com *Erythrina mulungu*.
- Política Nacional de Práticas Integrativas e Complementares. (2006). Portaria nº 971 de 3 de maio de 2006. https://bvsms.saude.gov.br/bvs/saudelegis/gm/2006/prt0971_03_05_2006.html
- Ribeiro, J. A., et al. (2018). Caffeine and adenosine. *Journal of Alzheimer's Disease*, 20, S3–S15.
- Rolim, M. C., et al. (2017). Efeitos ansiolíticos do extrato de *Erythrina mulungu* em modelos animais.
- Santos, M. R. V., et al. (2018). Estudo clínico sobre o uso de *Cymbopogon citratus* em indivíduos com insônia.



- Silva, J. A., et al. (2015). Efeitos da suplementação de *Passiflora incarnata* L. sobre a ansiedade em humanos.
- Silva, T. B. S. (2021). Sono e metabolismo: Revisão narrativa.
- Silva, V. C., Gomes, A. R., & Siqueira, J. P. (2021). Efeitos terapêuticos da *Melissa officinalis*.
- Silva, V. C., Santos, M. A., & Siqueira, J. P. (2022). Potencial terapêutico da *Passiflora incarnata* em distúrbios do sono.
- Souza, L. M. (2020). Saúde integrativa no SUS: Princípios e práticas.
- World Health Organization. (2007). WHO monographs on selected medicinal plants. WHO Press.