

Review

Medicinal Plants for Insomnia, Anxiety, and Depression – A Narrative Review.

Plantas Medicinais para a Insónia, Ansiedade e Depressão – Uma Revisão Narrativa.

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Abstract: Insomnia, anxiety, and depression are on the rise worldwide, impacting the lives of millions of people.

The aim of this study is to investigate and evaluate the potential role of medicinal plants in treating these conditions, seeking to understand whether the use of these plants can provide significant benefits in alleviating the symptoms of these disorders, contributing to an alternative or complementary therapeutic approach. The research focuses on analyzing the efficacy and safety of medicinal plants in patients affected by insomnia, anxiety, and depression. By offering detailed insights into their clinical benefits, the study also seeks to inform and enhance comprehensive and integrative therapeutic approaches for these mental health conditions.

The study highlights global challenges related to these disorders, pointing to medicinal plants as promising and safer alternatives, with the need for caution in their use and proposing an integrative approach for more personalized management of these conditions.

Keywords: Medicinal plants, Non-Conventional Therapies, Traditional Chinese Medicine, Naturopathy, Insomnia, Anxiety, Depression.

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Resumo: A insónia, a ansiedade e a depressão estão a aumentar em todo o mundo, afetando a vida de milhões de pessoas. O objetivo deste estudo é investigar e avaliar o papel potencial das plantas medicinais no tratamento destas condições, pelo que se procura compreender se o uso dessas plantas pode proporcionar benefícios significativos no alívio dos sintomas desses distúrbios, contribuindo para uma abordagem terapêutica alternativa ou complementar. Assim, a pesquisa visa analisar a eficácia e a segurança das plantas medicinais em pacientes afetados por insónia, ansiedade e depressão, fornecendo informações substanciais sobre a sua utilidade clínica, que podem orientar práticas terapêuticas mais abrangentes e integrativas para estas condições de saúde mental. O estudo destaca os desafios globais relacionados com estes distúrbios, apontando as plantas medicinais como alternativas promissoras e mais seguras, com a necessidade de cautela na sua utilização, propondo uma abordagem integrativa para uma gestão mais personalizada destas condições.

Palavras-chave: Plantas Medicinais, Terapêuticas não convencionais, Medicina Tradicional Chinesa, Naturopatia, Insónia, Ansiedade, Depressão.

1. Introduction

1.1 Definition and Importance of Mental Health

Mental health refers to the overall state of a person's emotional, psychological, and social well-being, involving the ability to cope with stress, maintain healthy relationships, make decisions, face life challenges, and carry out daily activities. Therefore, mental health is fundamental for the proper functioning of daily life ¹.

On the other hand, according to Taschereau-Dumouchel, Michel ², mental disorders refer to conditions that affect a person's thinking, mood, behaviour, or social interaction,

resulting in significant distress and functional impairment. There are many different types of mental disorders, each with its own symptoms and diagnostic criteria.

Additionally, it is important to note that the line between mental health and mental disorders is not always clear, and the mental health spectrum is diverse, with natural variations from one person to another. Thus, each individual has their mental health, influenced by biological, genetic, environmental, and social factors. In turn, the stigma surrounding mental disorders has diminished, and it is crucial to promote understanding, empathy, and access to mental health care to improve the quality of life of the affected individuals ¹.

Moreover, the prevalence of mental disorders is a global reality, affecting millions of people across different cultures and regions of the world. The extent of these challenges varies, but it is undeniable that mental health is a widely spread and often underestimated issue. In this sense, individuals with these conditions experience a significant impact on their daily lives, facing barriers to achieving emotional and social balance. This individual impact manifests through negative influence on interpersonal relationships, self-esteem, and the fulfilment of daily activities ³.

According to Volkert, Schulz ³, the global impact of mental disorders transcends borders, affecting not only individuals but also society as a whole, with associated costs going beyond financial aspects, encompassing work productivity and quality of life. However, discrimination and stigma regarding mental health add a layer of complexity, resulting in social exclusion and perpetuating inequalities. Thus, the importance of addressing mental health on a global scale becomes evident, seeking not only effective treatments but also awareness strategies and inclusive public policies to tackle this complex issue.

The World Health Organization (WHO) defines mental health as “a state of well-being in which an individual realizes his or her abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community” ⁴.

According to the Portuguese Society of Psychiatry and Mental Health (SPPSM), a mental disorder refers to changes in thinking and emotions, often manifested through specific behaviours or a combination of these factors. These changes are linked to a decrease or loss of the ability to act freely and/or a deterioration in the individual's daily activities, affecting their social life, employment, or family interactions ⁵.

According to the SPPSM, more than one-fifth of Portuguese people suffer from a psychiatric disorder (22.9%), with Portugal being the second country with the highest prevalence of psychiatric illnesses in Europe, only surpassed by Northern Ireland (23.1%). Among psychiatric disorders, anxiety disorders have the highest prevalence (16.5%) ⁶.

2. Historical use of Medicinal Plants

The use of medicinal plants dates back to the dawn of human history when our ancestors discovered the therapeutic properties of plants by observing animal behaviour. Over millennia, different cultures developed their knowledge about medicinal plants, passing this knowledge down from generation to generation ⁷.

Additionally, the historical context of medicinal plants reveals a rich and diverse trajectory, with each society contributing to the global knowledge about the healing properties of plants. The dissemination of this knowledge through trade routes and human migrations helped create a vast repertoire of medicinal plants that transcend geographical boundaries. This heritage of ancestral knowledge continues to influence contemporary medicine as scientists and researchers explore the bioactive properties of plants to develop modern treatments based on wisdom accumulated over the centuries ⁷.

As described by Alcantara, Joaquim ⁸, the concept of a medicinal plant encompasses any plant that, when administered to humans or animals by any route or form, manifests some therapeutic action. The therapeutic procedure that uses medicinal plants is called phytotherapy, and phytotherapeutic agents are the medicines derived from these plants. Medicinal plants and phytotherapy utilize the active principles found in various parts of

the plants, such as leaves, flowers, roots, bark, and seeds. These chemical substances have pharmacological effects on the body and are capable of influencing different systems and organs.

According to Andrade, Cardoso ⁹, the use of natural products, especially from the flora, for medicinal purposes dates back to the dawn of humanity. There is evidence of the use of medicinal and toxic plants that dates back to the most ancient civilizations, constituting one of the oldest therapeutic practices adopted by humans for the cure, prevention, and treatment of diseases.

Vale ¹⁰ indicates that the earliest records of phytotherapy date back to the period of 2838-2698 B.C., during which the Chinese emperor *Shen Nung* compiled a catalogue of 365 medicinal herbs and poisonous substances, influenced by the Taoist principles of *Pan Ku*, considered the God of creation.

3. Non-Conventional Therapies

According to Alves ¹¹, medicinal plants play a fundamental role in ancient therapeutic practices such as Traditional Chinese Medicine (TCM) and Naturopathy. In the Chinese approach, phytotherapy is intrinsically linked to the principles of energetic balance, seeking to harmonize the flow of *Qi* to promote health. Plants like *ginseng* and *astragalus* root are integrated into formulations to strengthen the body and treat specific conditions. Naturopathy, on the other hand, values the healing properties of plants, emphasizing a holistic approach and the body's ability to self-balance. Herbs like chamomile and valerian are used to promote emotional and physical well-being. Thus, the interconnection between medicinal plants and these traditional therapies highlights the wisdom accumulated over centuries in the sustainable use of nature for healing.

In TCM, various therapeutic modalities are used, such as acupuncture, phytotherapy, diet therapy, massage, and physical exercises. While acupuncture stands out as an effective treatment method, phytotherapy assumes a central role in TCM, especially for addressing psychological disorders. Restoring the sleep cycle and reducing anxiety are crucial aspects for achieving positive outcomes in TCM, with plants playing an essential role in this process, contributing to sleep restoration and mental calmness without causing chemical dependency ¹².

According to TCM, diseases originate in the mental and spiritual planes, making this the primary starting point for treatment. Focusing exclusively on the body will not produce the desired results since the disease will persist. It is imperative to direct attention to the mental and spiritual dimensions, recognizing that effective healing requires an integral approach that considers not only physical symptoms but also underlying psychological and spiritual influences ¹².

Classical TCM texts explain that mental illnesses result from imbalances related to the heart, where the *Shen* (spirit and consciousness) resides, and the liver, responsible for the flow of *Qi* (vital energy) and emotions. Practically all relevant syndromes, including insomnia, anxiety, and depression, have their roots in alterations of the *Shen*, heart, and liver. TCM emphasizes the importance of diagnosis when prescribing phytotherapeutic treatments, stressing the personalized nature of phytotherapy, which aims not just to treat a specific disease but the patient as a whole. TCM's approach does not limit itself to treating the body or mind in separate; it integrates the functional connection between mind and body. For instance, when treating anxiety with phytotherapy, TCM recognizes that this can result in the reduction of symptoms such as joint pain, which are not exclusively related to stress or anxiety ¹².

Medicinal plants are also among the primary therapeutic resources of Naturopathy. The roots of Naturopathy date back to the dawn of human civilization, and its foundational philosophies span thousands of years, integrating wisdom from various cultures, including Indian (*Ayurveda*), Chinese (Taoist), Greek (Hippocratic), Arab, and Egyptian traditions. Naturopathy, like TCM, adopts a holistic approach that considers not only physical symptoms but also the emotional, mental, and spiritual aspects of the patient.

This approach aligns with the principle that body, mind, and spirit are interconnected and mutually influence health and well-being. By considering the patient holistically, naturopaths seek to identify and address the underlying causes of health problems, rather than just treating symptoms ¹³.

According to Rodrigues, Santos ¹⁴, TCM appears to bring significant benefits to mental health, with a solid evidence base highlighting its potential use as an integral part of integrative medicine. Introducing these techniques into the healthcare system has the potential to enhance the treatment of various mental conditions, contributing to the improved quality of life for patients facing other pathologies. Additionally, TCM can play a crucial role in offering therapeutic alternatives to populations that, for various reasons, do not have access to or cannot receive conventional treatments. However, it is imperative to intensify research in this field, increasing the number of studies and further improving methodological quality to consolidate the scientific foundations and effectiveness of these approaches in promoting mental health.

Furthermore, naturopathic treatment appears to be safe and effective, with benefits over standardized psychotherapy in treating mild to severe generalized anxiety, with many patients seeking alternative and/or complementary care to conventional anxiety treatments ¹³.

The aim of this study is to investigate and evaluate the potential role of medicinal plants in treating conditions such as insomnia, anxiety, and depression, seeking to understand whether the use of these plants can provide significant benefits in alleviating the symptoms of these disorders, contributing to an alternative or complementary therapeutic approach. The research aims to analyze the efficacy and safety of medicinal plants in patients affected by insomnia, anxiety, and depression, offering important information about their clinical utility. Thus, the study intends to provide substantial information that can guide more comprehensive and integrative therapeutic practices for these mental health conditions.

4. Results and Discussions

4.1. Medicinal Plants for Insomnia

Insomnia is a sleep disorder characterized by persistent difficulty in initiating or maintaining sleep, resulting in inadequate sleep quality. It can manifest as difficulty falling asleep, frequent awakenings during the night, or waking up very early in the morning with difficulty returning to sleep. The prevalence of insomnia varies across different populations but is a common issue worldwide. Estimates of the prevalence of insomnia vary based on the criteria used to define the sleep disorder and, more crucially, depend on the population studied. Population studies indicate that approximately 30% of various adult samples from different countries report experiencing one or more symptoms related to insomnia. These symptoms include difficulty initiating sleep, challenges in maintaining sleep, early morning awakenings, and, in some cases, experiencing non-restorative or unsatisfactory quality sleep. This variability highlights the complexity of insomnia as a global phenomenon and underscores the importance of uniform criteria when evaluating its prevalence in different population contexts ¹⁵.

The impact of insomnia extends beyond immediate sleep difficulties, as affected individuals often experience daytime fatigue, difficulty concentrating, irritability, and mood changes. Consequently, quality of life can be significantly impaired, and insomnia is also associated with a higher risk of developing mental health issues such as anxiety and depression. Furthermore, insomnia can contribute to physical health problems, including increased risk of cardiovascular diseases, diabetes, and compromised immune function. Therefore, understanding the prevalence and impact of insomnia is crucial for developing effective prevention and treatment strategies ¹⁶.

According to Attele, Xie ¹⁷, conventional treatments for insomnia generally include pharmacological approaches and behavioural therapies. However, these strategies have

specific limitations. The use of sleep-inducing medications, such as hypnotics, can be associated with side effects like daytime drowsiness, dizziness, and the risk of dependency. Additionally, the long-term efficacy of these medications may decrease, and abrupt discontinuation can result in withdrawal symptoms. On the other hand, behavioural therapies, such as cognitive-behavioural therapy (CBT) for insomnia, are considered effective, but access to and availability of qualified professionals can be limited. Moreover, these therapies require significant time and effort from the patient, which can be challenging for some.

Excessive reliance on pharmacological treatments can also overlook other exploratory approaches to the underlying causes of insomnia, such as psychosocial factors, stress, and inadequate lifestyle habits. Therefore, there is an urgent need to develop and promote integrative, personalized, and accessible therapeutic approaches that address the individual complexities of insomnia and minimize the potential limitations associated with conventional treatments ¹⁶.

According to a study by Lemoine, Bablon ¹⁸, in healthy adults diagnosed with mild to moderate insomnia, the combined administration of melatonin, vitamin B6, and medicinal plant extracts resulted in notable improvements in sleep onset latency, sleep quality, and daytime functional capacity. However, the lack of a control group prevents definitive confirmation of the treatment effects, although the results indicate potential benefits. Melatonin, vitamin B6, and medicinal plants individually demonstrated a favourable safety profile, with minimal reports of adverse events and no concerns about dependency or withdrawal.

In this study, two mechanisms were verified for the action of *Melissa officinalis* extract on anxiety-like reactivity and circadian and exploratory activities. This was achieved through its cholinergic properties, measured by acetylcholinesterase inhibition and binding capacity to cholinergic receptors (nicotinic and muscarinic receptors) ¹⁸.

Melissa officinalis, popularly known as lemon balm, has an impressive list of health benefits, extending beyond the treatment of sleep problems and emotional balance, which is remarkable in itself. *Melissa officinalis* also demonstrates antidepressant, antiviral, and hypotensive properties, offering comprehensive support for physical and mental well-being. Additionally, its antispasmodic action is useful for relieving discomforts, while its anti-cancer and anti-inflammatory properties have sparked interest in the scientific community ¹⁹.

The properties of *Cannabis sativa* L. are also related to improving insomnia and include its potential to induce sleep, relax muscles, and reduce anxiety, thereby improving sleep quality. Its active compounds can modulate sleep patterns, promoting deeper and restorative sleep. However, it is important to emphasize that the use of *Cannabis sativa* L. to treat insomnia should be done with caution, considering the potential side effects and the need for appropriate medical guidance ²⁰.

Additionally, the study by Cho, Shimizu ²¹ demonstrated for the first time that liquorice and silk tree have sedative-hypnotic activity, possibly modulating gamma-aminobutyric acid and antidepressant receptor antagonists. The authors propose that liquorice and silk tree may be effective candidates for the treatment of insomnia.

In terms of TCM and Naturopathy, both *Melissa officinalis* and *Cannabis sativa* L., liquorice, and silk tree have been valued for their therapeutic properties.

Melissa officinalis is frequently used to treat emotional imbalances, especially related to anxiety and stress, which can directly affect sleep. Its ability to regulate the menstrual cycle and alleviate cramps is also recognized, making it useful in treating menstrual disorders. Additionally, its antiviral, hypotensive, antispasmodic, anticancer, and anti-inflammatory properties are considered valuable in TCM for promoting overall patient health and well-being ²².

Cannabis sativa L. is seen as an option to improve sleep quality, especially in cases of insomnia, with its active compounds known for their relaxing and sedative properties,

which can help induce sleep and reduce anxiety, thus promoting deeper and restorative sleep ²⁰.

Liquorice (*Glycyrrhiza glabra*) is widely used in TCM due to its anti-inflammatory and antioxidant properties. It is valued for its ability to harmonize the body, particularly the digestive system, and is often used to treat disorders related to inflammation, such as gastric ulcers and throat irritations. Additionally, liquorice is known to help regulate blood sugar levels and promote adrenal health ²¹.

4.2. Medicinal Plants for Anxiety

Anxiety is a natural response of the body to perceived threatening situations. It is characterized by feelings of worry, nervousness, and apprehension, often accompanied by physical symptoms such as increased heart rate, muscle tension, and sweating. While it is a normal reaction in certain circumstances, anxiety becomes problematic when it is disproportionate to the stimulus or persists chronically, negatively affecting the quality of life ²³.

The prevalence of anxiety is significant on a global scale, affecting people of all ages, genders, and ethnic backgrounds. It is estimated that approximately 284 million people worldwide live with some form of anxiety disorder, making it one of the most common mental health issues. Anxiety disorders can manifest in various forms, such as generalized anxiety disorder (GAD), panic disorder, specific phobias, and obsessive-compulsive disorder (OCD) ²⁴.

The impact of anxiety on daily life is substantial, as it can impair academic and professional performance, harm interpersonal relationships, and contribute to the development of other mental health issues such as depression. Sleep quality is often compromised, leading to fatigue and decreased concentration. In more severe cases, anxiety can result in the avoidance of complex situations, limiting the affected person's life ²³.

Addressing anxiety as a mental health issue is essential to mitigate its negative impacts. Therapeutic interventions, such as psychotherapy and, in some cases, medication, are commonly used to manage symptoms and improve the quality of life for those living with anxiety disorders. A deep understanding of anxiety and its implications is crucial for developing effective prevention and treatment strategies, aiming to promote the mental well-being of the population ²³.

Conventional treatments for anxiety typically include pharmacological and psychotherapeutic approaches. In the pharmacological aspect, anxiolytic medications such as benzodiazepines and selective serotonin reuptake inhibitors are commonly prescribed to relieve acute symptoms. While these medications can provide temporary relief, they often come with side effects such as drowsiness, dizziness, and potential dependency. Moreover, their long-term efficacy can be limited, and some patients may develop tolerance, necessitating constant medication adjustments ²⁵.

In the field of psychotherapy, approaches like CBT are widely used to treat anxiety. Although CBT has shown significant efficacy, its success often depends on the patient's adherence and willingness to participate in the therapeutic process actively. Additionally, access to qualified professionals and the availability of mental health services can be limited, making it challenging for a significant portion of the population to access effective treatments. These limitations highlight the ongoing need for research and the development of more accessible, personalized, and effective approaches to treating anxiety ²⁵.

According to Bortoluzzi, Schmitt ²³, the beneficial effects of herbal medicines in promoting and maintaining health, especially regarding anxiety, have played a crucial role as a complement to conventional treatments. Thus, the use of fresh medicinal herbs proves to be an effective strategy for alleviating anxiety, with this effect being enhanced when combined with the application of essential oils. This analysis underscores the importance of herbal medicine as an alternative approach to treating anxiety.

Anxiety and depression disorders represent significant barriers to achieving a healthy and fulfilling life. In recent years, particularly after the COVID-19 pandemic, there

has been a significant increase in the prevalence of these conditions on a global scale. In the context of treatment, conventional methods, which often involve the use of allopathic drugs, are the first approach adopted, especially within the public health system. However, these conventional treatments present several challenges, such as high costs, difficulties in accessing medications, and the occurrence of severe side effects. These limitations not only compromise the effectiveness of treatment but also highlight the urgency of exploring more accessible alternatives with fewer adverse impacts to provide a more comprehensive response to the growing mental health needs of contemporary society ²⁶.

According to Santos, Galvão ²⁷, the significant increase in anxiety cases, particularly after the COVID-19 pandemic, has become an issue of extreme relevance. Recent studies highlight the considerable psychological impacts resulting from the new dynamics experienced by the global population. The widespread uncertainty and excessive consumption of negative information have generated significant adverse effects on mental health. Given this scenario, the growing incidence offers a crucial opportunity to introduce herbal approaches. Thus, a bibliographic review-based approach, emphasizing alternatives to allopathic medications as a last resort, highlights integrative practices as beneficial to health. This topic focuses on four specific plants – spearmint (*Mentha sp.*), lemon balm (*Melissa officinalis*), passionflower (*Passiflora incarnata*), and valerian (*Valeriana officinalis*). It explores the clinical efficacy, chemical properties, benefits, and botanical and pharmacological characteristics of these plants, providing a comprehensive overview of the herbal options available for treating anxiety.

Based on the information presented and discussed, it is possible to assert that medicinal plants have the potential to be used to control or reduce symptoms associated with anxiety, although it is imperative to allow time for the compounds present in the plants to manifest their effects in the body. Additionally, specific precautions are crucial, such as choosing the appropriate parts of the plant to obtain therapeutic benefits effectively. Thus, caution when combining medicinal plants with conventional medications is essential due to the risk of harmful interactions. It is also relevant to note that medicinal plants can trigger adverse effects in the body, underscoring the importance of seeking guidance from a healthcare professional before starting any treatment with these substances, ensuring a safe and effective approach to controlling anxiety ²⁸.

In the study by Amin B. and Oliva M. ²⁹, it was observed that *Melissa officinalis* extract is widely used in various clinical applications, mainly to manage anxiety. Additionally, the antiviral properties of this extract have been the subject of microbiological studies.

Furthermore, the study by Safari, Asadi ²² reveals that the daily use of *Melissa officinalis* over 12 weeks in diabetic patients with symptoms of depression reduced both depression and anxiety. In summary, this study evidenced a significant improvement in symptoms of depression and anxiety with the use of *Melissa officinalis* extract, but further investigations are needed to fully understand its potential impact in other health areas, such as sleep disorders and blood pressure, as well as in anthropometric parameters.

Additionally, in TCM, the kidneys are associated with the emotion of fear, and this emotion, along with worry, is linked to anxiety. Thus, kidney anxiety is generally related to life situations, and kidney-related anxiety is often due to guilt. Although it is said that fear makes the *Qi* (used in TCM to assess the body's vitality) descend, sometimes chronic fear and kidney anxiety cause *Qi* to rise, making the person feel hot in the face, slightly dizzy, and anxious ³⁰.

On the other hand, the emotion related to the spleen is worry. In chronic cases, worry can cause anxiety, as the person is constantly anxious about their mental discussions. Spleen anxiety can also be related to issues of Earth's nutrition, such as ignoring one's own needs and putting others' needs first ³⁰.

Moreover, liver-related anxiety is similar to worry, as in cases where people tend to worry easily, they are often tense and try to be perfectionists. Thus, liver anxiety is also related to dissatisfaction with one's achievements ³⁰.

4.3. Medicinal Plants for Depression

According to Pacheco, Silva ³¹, depression is a condition characterized by mood changes, low self-esteem, decreased libido, and impairment of various functions. These depressive episodes are categorized into three levels of intensity: mild, moderate, and severe.

Thus, depression is a psychiatric condition characterized by persistent feelings of sadness, hopelessness, and lack of interest or pleasure in daily activities. It goes beyond mere emotional downturns and can significantly affect daily functioning, interfering with interpersonal relationships, work productivity, and social activities. There are different types of depression, including major depression and bipolar disorder. The severity of symptoms can vary from mild forms to more intense episodes that require immediate medical intervention ³².

Depression is one of the leading causes of disability worldwide. According to the World Health Organization (WHO), it is estimated that more than 264 million people suffer from depression, making it one of the most common and debilitating mental health conditions globally. Depression affects individuals of all ages, races, and social classes, but its prevalence can vary among different demographic groups: women have a higher prevalence rate than men, and adolescents are also susceptible to depressive symptoms ³³.

In addition to personal impact, depression has significant social and economic consequences, leading to absenteeism from work, reduced productivity, and associated medical care costs, contributing to a substantial societal burden. Depression often coexists with other medical conditions, such as cardiovascular diseases, diabetes, and anxiety disorders, further complicating the clinical picture and therapeutic approach. Therefore, the quality of life of people affected by depression is frequently compromised ³².

According to Park and Zarate ³⁴, the precise diagnosis of depression is often challenging, as symptoms can be subjective and vary widely among individuals. Social stigmatization can also hinder seeking help. In this context, various therapeutic approaches, including psychotherapy, antidepressant medications, and lifestyle interventions, are used to treat depression. The choice of treatment often depends on the severity of symptoms and individual needs. Thus, awareness about depression is crucial to combat the stigma associated with mental illnesses, promoting the pursuit of treatment and providing adequate support to the affected individuals. Understanding the prevalence and impact of depression is a fundamental step in building a more empathetic and mentally healthy society.

Conventional treatments for depression often involve the use of antidepressant medications, such as selective serotonin reuptake inhibitors (SSRIs) and CBT. However, these approaches have substantial limitations. SSRIs, while effective for many, can cause side effects, including insomnia, weight gain, and sexual dysfunction, limiting their tolerance for some patients ³⁴.

Chemical dependency is a concern associated with antidepressants, and abrupt discontinuation of these medications can lead to withdrawal symptoms. The need to find the right medication for each individual and the delay in the onset of therapeutic effects are also common challenges. CBT, while valuable, faces obstacles related to the availability of qualified professionals and the cost of sessions. Additionally, the success of CBT depends on the patient's motivation and active participation, which can vary significantly ³⁵.

The conventional approach often focuses on managing symptoms, neglecting the underlying causes of depression. The lack of preventive treatment can result in the progression of the disorder before appropriate interventions are implemented. Research remains crucial to overcome the limitations of existing conventional treatments, and the search for new medications with fewer side effects, faster action, and less potential for dependency is a priority in the field of mental health ³⁴.

Moreover, the lack of personalized options is a notable limitation of conventional treatments. The response to medications and therapies varies considerably among individuals, highlighting the need for a more individualized approach to optimize outcomes³⁵.

Integrating complementary approaches, such as regular physical exercise and relaxation techniques, can offer additional benefits in treating depression. However, the lack of integration of these practices into the conventional approach is a limitation that deserves attention. Interdisciplinary collaboration among mental health professionals is crucial to ensure a comprehensive and effective approach, and effective communication among doctors, psychologists, and other caregivers is necessary to optimize treatment³⁵.

In summary, while conventional treatments play a significant role in managing depression, their limitations highlight the need for a more comprehensive, personalized, and integrative approach. Continuous research, public awareness, and the pursuit of therapeutic alternatives are fundamental steps to improve the efficacy and quality of care offered to individuals facing depression.

Frequent prescriptions of conventional antidepressants can negatively impact patient adherence to treatment. An alternative considered is the use of antidepressants derived from medicinal plants, such as *Rhodiola rosea* (Golden Root), *Hypericum perforatum* (St. John's Wort), and *Crocus sativus* (Saffron), whose use has become common due to their comparable efficacy and lower propensity for adverse reactions compared to conventional medications³¹.

Pacheco, Silva³¹ also highlight that the use of medicinal plants proves effective in treating depression at its various intensity levels, promoting adherence to treatment due to reduced side effects. However, like any medication, even those of low toxicity present risks if used improperly. It is crucial to recognize that medicinal plants have their adverse effects and contraindications. Therefore, pharmaceutical care plays a fundamental role in guiding users on the rational use of these phytotherapeutics, ensuring their safety and efficacy.

Nobrega, Batista³⁶ conducted a bibliographic analysis of the most commonly used medicinal plants in the treatment of anxiety and depression, concluding that the significant increase in mental illnesses in recent years, especially due to modern lifestyle, has significant implications for quality of life. In the therapeutic context, medicinal plants and phytotherapeutics emerge as viable options for addressing cases of anxiety and depression, standing out for their lower incidence of side effects. The research specifically addressed the following species: *Hypericum perforatum*; *Passiflora incarnata*; *Melissa officinalis*; *Chamomilla recutita*; *Piper methysticum*; *Erythrina verna*; *Humulus lupulus*; and *Crataegus oxyacantha*. In reviewing the literature, it was possible to elucidate the efficacy of all these species based on descriptions found in previous studies, particularly in the treatment of anxiety and depression. The scientific literature reveals a range of pharmacological properties associated with these plants, including anxiolytic, antidepressant, and sedative activities.

According to Saki, Bahmani³⁷, depression represents a psychiatric condition with high comorbidity and an increasing prevalence, potentially resulting in the second highest morbidity risk. Due to the side effects and harmful impacts associated with some chemical substances used in treatment, many patients prefer phytotherapeutic medications for managing this disease. While there are relevant review articles on the topic of medicinal plants and psychiatric disorders, many of them address the issue superficially or focus on a specific medicinal plant. This study aims to address the impact of the most relevant medicinal plants on depression more comprehensively.

Saffron, scientifically known as *Crocus sativus*, is a plant that has been valued throughout history for its medicinal and culinary properties. In TCM, saffron is called *Xi Hong Hua* and is recognized for its various therapeutic applications, such as treating depression and mania³⁸.

The study by Jackson, Forster ³⁹ aims to analyze the relationship between the structure and activity of chemical components previously documented in the literature for the plant *Crocus sativus*. This study sought to understand the biological mechanisms already observed in vivo and identify potential mechanisms not yet reported. The results significantly contributed to understanding the molecular basis underlying the antidepressant properties of these bioactive compounds. This opens new perspectives for the development of more effective and specific pharmaceutical products, offering alternatives to currently available treatments for depressive disorders. The study found that the saffron extract appears to reduce depressive mood in healthy individuals with mood disorders, contributing to the growing literature demonstrating the consistent benefits of saffron on depression outcomes in clinical and non-clinical populations. The beneficial effect of saffron shown in this study suggests that this natural extract may be particularly relevant for increasing resilience against the development of stress-related psychiatric disorders. Further research is needed to identify the exact mechanisms underpinning these effects in humans.

According to TCM principles, depression is often associated with an imbalance in the flow of vital energy, or *Qi*, and blood flow throughout the body. Saffron is considered an herb that promotes blood circulation and removes stasis, meaning it can help improve blood flow and dissipate blockages that may contribute to depressive symptoms. TCM also recognizes that depression can be caused by emotional factors, such as chronic stress or emotional trauma. In such cases, saffron is valued for its properties that calm the mind and promote a state of emotional balance ¹².

It is important to note that, although saffron has been traditionally used to treat depression in TCM, it is always recommended to seek guidance from a qualified healthcare professional before starting any herbal treatment. Moreover, TCM often uses a holistic approach to treatment, which may include dietary changes, acupuncture, and other complementary therapies alongside the use of medicinal herbs ³⁸.

In this context, the actions of herbs, in general, should be discussed clearly, and the principles of herb combination, both in theory and practice, should be very detailed. Each herb's indication is associated with a TCM syndrome, as is typical of Chinese herb compendiums, and introducing various newly justified TCM pattern definitions will help refine herbal prescriptions ⁴⁰.

Ross ⁴⁰ also introduces an intriguing concept of possible variable temperature properties within individual herbs. Yarrow (*Achillea millefolium*), for example, has amphoteric properties, both cold and hot, which can be modulated as needed. Its compositions indicate that the variety of chemical constituents found within a plant can be inferred to have different temperatures.

Ayoobi, Moghadam-Ahmadi ⁴¹ reported that severe depression has a negative impact on quality of life and treatment adherence in patients with multiple sclerosis. Some findings indicated that *Achillea millefolium* has antidepressant-like effects and, therefore, reduced depression in patients with multiple sclerosis.

5. Conclusions

In conclusion, sleep disorders, anxiety, and depression are mental health issues that significantly impact people's quality of life worldwide. Conventional treatments for these conditions include pharmacological approaches and behavioural therapies, but they have limitations such as side effects, dependency and accessibility. Conversely, the use of medicinal plants, as demonstrated in studies, stands out as a promising and less harmful alternative.

Analysis of studies on the use of medicinal plants in treating these conditions reveals their potentially significant role in promoting mental health. Thus, combinations such as melatonin, vitamin B6, and medicinal plant extracts have shown notable improvements in insomnia, while plants like liquorice and silk tree have exhibited sedative-hypnotic effects. In the therapeutic context, medicinal plants such as *Hypericum perforatum*, *Passiflora*

incarnate, *Melissa officinalis*, *Chamomilla recutita*, *Piper methysticum*, *Erythrina verna*, *Humulus lupulus*, and *Crataegus oxyacantha* emerge as a viable option for treating anxiety and depression due to their lower incidence of adverse effects and pharmacological properties such as anxiolytic, antidepressant, and sedative activities. For depression, herbal remedies like *Rhodiola rosea*, *Crocus sativus* and *Hypericum perforatum* demonstrate efficacy comparable to conventional antidepressants with a lower propensity for side effects.

However, it is crucial to emphasize the importance of caution in using medicinal plants, considering their contraindications and potential interactions with other medications. Therefore, integrating these herbal approaches with conventional treatments could offer a more personalized approach to managing these conditions.

Ultimately, continuous research, public education, and the development of more accessible and effective therapeutic approaches are essential in addressing the challenges related to insomnia, anxiety, and depression. In this regard, an integrative approach considering the potential of medicinal plants offers a promising outlook for the future treatment of these complex conditions.

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