Journal of Complementary Therapies in Health
ISSN 2975-9323 | eISSN 2975-9552

Review

Medicinal Mushrooms in Mental Health: A Review of TCM and Naturopathy.

Cogumelos Medicinais na Saúde Mental: Uma Revisão da MTC e Naturopatia.

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Abstract: Medicinal mushrooms have long been an integral part of Traditional Chinese Medicine (TCM) and are increasingly recognized for their potential mental health benefits. This review examines the therapeutic properties of several medicinal mushrooms—*Agaricus blazei*, *Coriolus versicolor*, *Ganoderma lucidum*, *Cordyceps sinensis*, *Hericium erinaceus*, and *Psilocybe cubensis*—focusing on their bioactive compounds and applications in mental health. These mushrooms are rich in polysaccharides and triterpenoids, which contribute to their immunomodulatory, anti-inflammatory, and neuroprotective effects. Traditional uses and modern scientific findings suggest these mushrooms can reduce symptoms of anxiety, depression, and cognitive decline. While promising, most research has been preclinical, emphasizing the need for robust human clinical trials. Integrating the traditional knowledge of TCM with Naturopathy and scientific research could provide new, culturally acceptable, and effective treatments for mental health disorders. This review highlights the importance of expanding clinical trials to validate the therapeutic potential of medicinal mushrooms in mental health care.

Keywords: Medicinal mushrooms; Mental Health; Traditional Chinese Medicine; Naturopathy.

Citation: Silva R., Fonseca ML. Medicinal Mushrooms in Mental Health: A Review of TCM and Naturopathy. Journal of Complementary Therapies in Health. 2024;2(2) 10.5281/zenodo.13353841

Academic Editor: Jorge Rodrigues

Received: 7 March 2024
Reviewed: 4 June 2024
Accepted: 18 July 2024
Published: 21 August 2024

Publisher's Note: IPTC stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Resumo: Os cogumelos medicinais têm sido uma parte integrante da Medicina Tradicional Chinesa (MTC) e são cada vez mais reconhecidos pelos seus potenciais benefícios para a saúde mental. Esta revisão analisa as propriedades terapêuticas de vários cogumelos medicinais—*Agaricus blazei*, *Coriolus versicolor*, *Ganoderma lucidum*, *Cordyceps sinensis*, *Hericium erinaceus* e *Psilocybe cubensis*—focando-se nos seus compostos bioativos e nas aplicações na saúde mental. Estes cogumelos são ricos em polissacarídeos e triterpenoides, que contribuem para os seus efeitos imunomoduladores, anti-inflamatórios e neuroprotetores. Usos tradicionais e descobertas científicas modernas sugerem que estes cogumelos podem reduzir sintomas de ansiedade, depressão e declínio cognitivo. Embora promissores, a maioria dos estudos são pré-clínicos, enfatizando a necessidade de ensaios clínicos robustos em humanos. Integrar o conhecimento tradicional da MTC com a Naturopatia e a investigação científica pode proporcionar novos tratamentos, culturalmente aceitáveis e eficazes. Esta revisão destaca a importância de expandir os ensaios clínicos para validar o potencial terapêutico dos cogumelos medicinais nos cuidados de saúde mental.

Palavras-chave: Cogumelos medicinais; Saúde Mental; Medicina Tradicional Chinesa; Naturopatia.

1. Introduction

Fungi belonging to the class of macro-fungi, commonly referred to as mushrooms, stand as one of the earliest forms of macro-fungi known to humanity [1].

Mushrooms, particularly those included in the basidiomycetous fungi category, are esteemed as a noteworthy and nutritious alimentary resource. They manifest a commendable profile characterized by low caloric density alongside elevated concentrations of vital minerals, indispensable amino acids, vitamins and dietary fibbers [2,3].

The subset of mushrooms known as medicinal mushrooms is of particular interest due to their synthesis of bioactive compounds, imparting potential therapeutic effects [4-7]. Their extensive distribution and historical consumption underscore their significance as vital bioresources [8].

Research indicates that medicinal mushrooms and fungi offer a wide array of therapeutic functions, with over 130 identified medicinal properties attributed to them [9,10]. Among the most potent immunostimulatory molecules sourced from mushrooms are β-glucans. These compounds possess the ability to activate various types of immune cells and elicit cytokine responses [11].

For millennia, mushrooms have served an integral component of medicinal practices across diverse cultures. Despite this rich historical backdrop, it is only in recent times that modern science has rediscovered and substantiated the profound medicinal potential harbored within mushrooms, validating the ancestral wisdom that has long revered them as potent sources of therapeutic compounds [12].

China serves as the birthplace of Mycotherapy, where medicinal mushrooms have been utilized since time immemorial. They were formally described, systematized, and organized in the first herbal treatise, *Pen Tsao King*, written around 200 BCE. Chinese pharmacopeia includes 270 species of medicinal mushrooms, with most of their uses and therapeutic properties outlined in the *Compendium of Materia Medica* (*Pen Tsao Kang Mu*) from 1575 [13].

Strangely, knowledge of the therapeutic virtues of mushrooms in the West likely dates back as far as in China. This is evidenced by the remains of Ötzi the Iceman, who perished around 5,300 years ago in the Alps with pieces of *Piptoporus betulinus* and *Fomitopsis officinalis*. These mushrooms may have been carried as tinder for starting fires due to their flammability, or perhaps their antiparasitic, anti-inflammatory (polyporenic acids), antibiotic (piptamine), antiviral, and antitumor properties were known at the time, as Ötzi's autopsy revealed intestinal parasites.

Despite relatively limited knowledge of the therapeutic properties of mushrooms in Europe, occasionally, surprises emerge that challenge the notion that mushrooms were neglected centuries ago. For instance, the renowned Swedish scholar Linnaeus mentioned in his 1749 book *Materia Medica* that *Auricularia auricula* was used in his time as an anti-inflammatory, for ocular issues, and for chest angina [13].

In contemporary TCM, mushrooms are commonly administered as medicinal agents in various forms including capsules, powders, teas, and incorporated into nutritional preparations such as soups and stews. Often, they are synergistically combined with other herbal medicines to augment their overall therapeutic efficacy. Reflecting the characteristic approach of Chinese nutritive and herbal therapies, the action of mushrooms is typically gradual, working from the innermost layers to the superficial levels of Qi (vital energy)—from the internal organ systems to the conduits/meridians. The utilization of mushrooms in TCM is grounded in their capacity to potentiate, complement, and activate the effects of other TCM modalities, thus fostering an integrative approach with biomedicine [14].

In the realm of mental health, the complementary utilization of TCM techniques is purportedly advantageous. Several studies have suggested the potential benefits of integrating TCM approaches into mental health care [15-20]. Such integration is believed to offer more accessible, affordable, and culturally acceptable mental health services [16].

According to the World Health Organization (WHO), mental health encompasses a state of well-being that empowers individuals to effectively navigate life's challenges, realize their potential, perform optimally in learning and work environments, and contribute positively to their communities. Mental health transcends mere absence of mental disorders, instead manifesting along a multifaceted continuum, wherein experiences vary from individual to individual [21].

In 2019, approximately 1 in every 8 individuals worldwide, totalling 970 million people, were reported to be living with a mental disorder, with anxiety and depressive disorders being the most prevalent. The advent of the COVID-19 pandemic in 2020 exacerbated the situation significantly, leading to a notable surge in the number of individuals affected by anxiety and major depressive disorders [22].

Despite the availability of effective prevention and treatment options, a substantial proportion of individuals with mental disorders lack access to adequate care. Furthermore, many individuals encounter social stigma, discrimination, and human rights violations in relation to their mental health conditions [22].

Given the limitations or side effects associated with many conventional medications, there is a growing preference among patients for herbal compounds to alleviate mood symptoms. Consequently, recent research efforts have shifted towards investigating the psychopharmacological properties of naturally occurring compounds as potential interventions for mental disorders [23].

A form of primary care medicine that integrates traditional healing practices with modern scientific advancements and contemporary research is Naturopathy [24] and TCM.

Naturopathy practice is guided by a unique set of principles that acknowledge the body's inherent ability to heal itself, emphasize the prevention of disease, and promote individual responsibility in achieving optimal health [24].

Whereas TCM represents a structured healthcare system derived from extensive clinical observation and experimentation, underpinned by a scientific framework of regulation. TCM encompasses distinctive theories and methodologies aimed at disease management and health optimization [25].

The purpose of this review is to analyze the evidence of *Agaricus blazei*, *Coriolus versicolor*, *Ganoderma lucidum*, *Cordyceps*, *Hericium erinaceus*, *Psilocybe cubensis,* the effectiveness of these medicinal mushrooms for mental health and their definition and effects according to TCM and Naturopathy.

2. Methodology

For this review, we considered the results of informal search on various databases, from their inception to February 2024, such as Pubmed, Google Scholar, Scielo, Cochrane, Web of Science and books. Titles were screened for relevance, and the selected studies were subject to abstract assessment, with the following key words: medicinal mushroom, mental health, traditional chinese medicine, traditional use, naturopathy.

Any studies that did not meet the above criteria were excluded.

3. Results and Discussion

3.1. Agaricus blazei Murill

Agaricus blazei Murill (AbM) is a species of edible mushroom belonging to the Basidiomycetes family. This fungus is indigenous to Piedade, a region situated within the coastal rainforest of Brazil [2,26].

The taxonomic classification of AbM was officially established in 1967 by the Belgian botanist Paull Heinemann, who aptly named the species in honor of the American mycologist William Murill [27].

AbM has widespread use as a popular and nutritionally valuable food source and serves a medicinal role among the local population. Traditional applications include remedies for various ailments such as hepatitis, atherosclerosis, elevated blood sugar levels, heart disease, dyslipidemia, and numerous other health conditions [28]. No information regarding the traditional application of AbM on mental health was found.

In accordance with TCM principles, this substance aids in intestinal health by fortifying the stomach, resolving phlegm, and mitigating cough symptoms. Additionally, it exhibits antispasmodic and analgesic properties, regulates *Qi* flow, and acts as an anthelmintic agent against intestinal parasites. These effects collectively contribute to enhancing

bodily strength and addressing deficiencies. The nature of AbM is warm and the taste is spicy and sweet [29].

Since the commencement of commercial cultivation in 1965, AbM has been the focal point of comprehensive scientific inquiries. Subsequent investigations have unveiled compelling evidence of its robust immunomodulatory and antitumor properties [29].

The extracts derived from the fruiting body of the mushroom are notably abundant in polysaccharides, specifically β-glucans. These compounds exhibit potent immunomodulating properties, primarily functioning by stimulating the innate immune system [30].

Studies in animals have concluded that AbM have antidepressant-like effects [31], anxiolytic-like activity [32] and contributes to the maintenance of myenteric plexus homeostasis, thereby supporting physiological integrity and impeding neuronal cell death [33].

Several researchers have reported a noteworthy improvement, also in animals, in both cognitive and physical aspects of individuals' lives following the consistent administration of AbM extract over a six-month period. The investigations further propose that the observed benefits may be attributed to the presence of pyroglutamate and ergosterol in conjunction with the anti-angiogenic effects inherent in A AbM 's β-glucan [34].

3.2. Trametes versicolor (L.) Lloyd

Trametes versicolor (L.) Lloyd, commonly identified as turkey tail or Coriolus versicolor, belongs to the family Polyporaceae [35].

Trametes versicolor is classified within the Basidiomycetes class of fungi and is renowned as a traditional medicinal mushroom that typically thrives on tree trunks [36].

The moniker "turkey tail" derives from the characteristic concentric rings of brown and tan hues exhibited by Trametes versicolor, closely resembling the tail feathers of a turkey. This distinctive visual feature contributes to the common colloquial reference of the mushroom [37].

This mushroom is prevalent in temperate regions of Asia, North America, and Europe, including widespread distribution in the UK, documented across all regions [38]. Its historical significance in TCM spans at least two millennia, with attributed general health-promoting effects [39], including benefits for endurance and longevity.

No data on the traditional use of Trametes versicolor for mental health was found.

Documentation of its medicinal virtues dates was notably chronicled within seminal texts such as the Compendium of Materia Medica and the Shen Non-Compendium Medica in ancient China [40].

Characterized by a mild nature and sweet taste, this mushroom is delineated within TCM as influencing the heart, spleen, liver, and kidney meridians in the human body. Its pivotal roles in health encompass fortifying the spleen, fostering diuresis, alleviating heat, and detoxification. In clinical applications, it is employed for conditions such as damp heat jaundice, hypochondriac pain, poor appetite, lassitude, and weakness, highlighting its multifaceted therapeutic utility [41]. Turkey tail has a sweet taste and a slightly warm nature [28].

Similar to other mushrooms, the nutritional and medicinal attributes are harnessed through the harvesting of its fruiting body. The fungus is a rich source of major macromolecules such as proteins, carbohydrates, lipids, and minerals [35].

The polysaccharides derived from this mushroom, specifically the commercially available products known as Polysaccharopeptide (PSP) from China and Polysaccharide-K (PSK) from Japan, have been asserted [35] to exhibit a spectrum of physiological activities. These activities encompass the promotion of immune function, anti-tumor effects, anti-inflammatory properties and anti-diabetic attributes [42-45].

Multiple studies have demonstrated the capacity of polysaccharides derived from Coriolus versicolor to effectively scavenge free reactive oxygen species (ROS) [46-48]. Such antioxidative effects hold promise in addressing various diseases, including arteriosclerosis, Alzheimer's disease, and cardiovascular and cerebrovascular conditions [49].

Clinical data also underscores PSP's diverse functions, such as improving patients' quality of life, enhancing learning and memory, and exhibiting antiulcer effects. Remarkably, the China State Food and Drug Administration (SFDA) has authorized 13 types of Coriolus versicolor-based drugs and one Coriolus versicolor-based health product for both clinical and commercial use [50].

3.3. Ganoderma lucidum

Ganoderma lucidum, known as *Ling Zhi* in China or Reishi in Japan, holds the epithet of "the fungus of immortality" and stands as one of the most revered traditional medicinal mushrooms [51].

Typically manifests in a hoof-like or fan-like morphology, predominantly found growing on the trunks of both living and deceased trees. Its distribution spans across Asia, parts of Europe, America, and Africa [52,53].

Ganoderma lucidum have a history of usage spanning over two millennia [54]. Historical records, such as *Shennong's Herbal Classic*, dating back to the first century BC, and contemporary sources like the Chinese Pharmacopoeia, document *G. lucidum*'s tranquilizing properties [41].

This *An-Shen* effect has been employed for centuries in the treatment of conditions such as restlessness, insomnia, and palpitations [55].

Its application spans a spectrum of ailments, including chronic hepatopathy, hypertension, neurasthenia, insomnia, bronchitis, gastric ulcer, diabetes, and cancer [56]. Due to its perceived health benefits and purported lack of adverse effects, *Ganoderma* has earned a distinguished reputation in Eastern cultures as the quintessential herbal remedy [57].

In TCM, it is used to strengthen the immune system, stimulate liver function and address cardiovascular problems. The ability to enhance *Jing-Qi* (ancestral energy) and mobilize *Qi* is also utilized to eliminate energy stagnations responsible for conditions such as arthritis, bronchitis, asthma, neurasthenia, insomnia, and heart diseases [13]. According to these principles, Reishi has a sweet and bitter taste and a neutral nature [28].

In contemporary Chinese medicine, *Ganoderma* finds utility in supporting immune function among patients undergoing chemotherapy or radiation therapy for cancer, among other therapeutic applications [58].

Additionally, it has been documented that triterpenoids derived from *Ganoderma lucidum* (GL) exhibit notable efficacy as adjuvant therapy, augmenting health and aiding in the treatment of various diseases, including prostate cancer, inflammation, atherosclerosis, diabetes, and neurodegenerative diseases [1]. These effects are substantiated by studies investigating various bioactive compounds isolated from both the fruiting bodies and mycelia of this fungus [56].

Recent findings have further corroborated its efficacy, demonstrating improvements in sleep patterns among patients afflicted with insomnia or other mental disorders [59,60].

Ganoderma lucidum contains approximately 400 active biomolecules [61], among which beta-glucans (polysaccharides) and triterpenoids such as ergosterol (provitamin D2) and ganoderic acids stand out. Additionally, the fungus is rich in omega-3 fatty acids, amino acids, vitamins, minerals, and other bioactive substances.

Reishi has shown remarkable antidepressant and anxiolytic potential due to its interaction with the 5-HT2A receptor, presenting favourable clinical outcomes in the treatment of insomnia, restlessness, and palpitations [62]. Additionally, Reishi has demonstrated the ability to regulate the production of interleukins, such as IL-6 and TNF-α [63], linking its immunomodulatory function to its adaptogenic role.

Furthermore, several studies have elucidated the pharmacological activities of *Ganoderma lucidum* extracts on the nervous system and disorders related to the central nervous system [64,65].

3.4. Cordyceps sinensis

Cordyceps sinensis has garnered recognition as a traditional medicine in China [66].

It is a complex comprised of the ascospores of the *Cordyceps sinensis (*BerK.) parasite, which infests the larvae of insects from the *Hepialidae* family [67]. The parasitic complex is also commonly referred to as "winter worm, summer grass" due to its distinct appearance during various seasons [57]. *Cordyceps sinensis* is primarily distributed in high-altitude regions, typically above 4,000 meters sea level, and is commonly found in provinces such as Qinghai, Tibet, Sichuan, Yunnan, Guizhou, and Gansu in China [67].

The energizing properties of this mushroom are related to Tibetan herding practices. With the arrival of spring and the first thaws, herders would take their livestock to high mountain areas to graze. After ingesting the *Cordyceps* fungus, yaks, goats, and sheep became stronger and more robust, exhibiting behaviors similar to those during mating season. Thus, the initial medicinal uses of *Cordyceps* were associated with improving reproductive capacity and vitality [13].

In TCM, *Cordyceps* is considered to stimulate the kidneys and, consequently, acts against senility. It enhances the *shen* (mental state), improving conditions related to the ears (such as tinnitus), joints, bones (osteoporosis), kidney-related issues, genitourinary problems, sexual dysfunction, and fertility. *Cordyceps* is also capable of restoring the *Jing-Qi*, or ancestral energy. In TCM, the movements of the kidney and lung are closely related in the concept of pentacoordination: the lung is the "mother" of the kidney, and therefore *Cordyceps* is also used for respiratory problems [13].

Cordyceps sinensis stands out for its rich composition, containing significant quantities of beta-glucans, ergosterol (provitamin D), essential amino acids, linoleic and linolenic acids, as well as vitamins and minerals. Of particular note is its abundance of cordycepin, accompanied by cordyceps acid and adenosine [13].

Numerous scientific investigations have underscored the hypoglycemic effects [68,69] and vasorelaxation properties [70] of *Cordyceps sinensis*. Moreover, fermentation has been observed to ameliorate the reduction in serum insulin concentration induced by diabetes, while also mitigating the elevation in blood glucose levels associated with diabetes [71].

In recent years, the majority of research efforts on *Cordyceps sinensis* have been directed towards elucidating its chemical composition and pharmacological activities, particularly its potential in the treatment of diabetic nephropathy [67].

A study delved into the antidepressant mechanisms of *Cordyceps sinensis* by employing a combination of network pharmacology and molecular docking techniques the findings put forth indicate that the active constituents present in *Cordyceps* could potentially manifest antidepressant effects by means of antioxidative stress mechanisms and modulation of the CREB binding protein [72,73]. Furthermore, studies have elucidated its antidepressant-like activity, wherein certain constituents are speculated to function as adrenoceptor and dopamine D2 receptor agonists, or inhibitors of noradrenaline/dopamine reuptake, in mice [74].

3.5. Hericium erinaceus

Hericium erinaceus, commonly known as lion's mane mushroom or HE, is extensively distributed across North America, Europe, and Asia. This mushroom has garnered recognition as a medicinal fungus for many years, particularly within the TCM paradigm [75,76].

As stated in TCM, *Hericium* has benefits for the five *zang* organs (*yin* organs), strengthens the spleen, and nourishes *Qi*. It also calms the mind, aids digestion, and reduces inflammation. The taste of this mushroom is sweet and neutral, with a neutral nature [28].

HE harbors three primary classes of bioactive compounds: polysaccharides, hericenones, and erinacines [77].

These bioactive compounds extracted from either its fruiting body or mycelium have exhibited a spectrum of beneficial properties. These include antioxidative [78], antidiabetic [79], anticancer [80,81], anti-inflammatory [82], antimicrobial [81], antihyperglycemic [83], and hypolipidemic effects [84].

With a rich historical background in medicinal usage, *Hericium erinaceus* has garnered attention for its potential to promote nerve and brain health. Notably, it possesses neurotrophic compounds, erinacines, capable of traversing the blood-brain barrier, thus indicating promise in the treatment of neurological disorders [85,86].

Lion's mane exhibits notable neuroprotective effects across various neurodegenerative conditions such as Parkinson's disease, Alzheimer's disease, Huntington disease, hypoxia/hypo-perfusion/stroke, nerve and brain injury, glutamate-induced neurotoxicity and epilepsy [87-94]. These effects, demonstrated in both in vitro and in vivo settings, are predominantly ascribed to the antioxidant, mitochondrial-protecting, and anti-inflammatory properties of *H. erinaceus* [95-101].

Also, recent preclinical and clinical investigations have unveiled additional therapeutic benefits of *H. erinaceus* beyond neuroprotection and cognitive enhancement. These include improvements in depressive symptoms, anxiety, and sleep disturbances [102-104].

The extract from the Lion's Mane mushroom not only enhances neuronal stability but also supports the normal development of brain cells. It demonstrates a regulatory influence on the process of myelin genesis in vitro, while preserving the growth of nerve cells unaffected. Furthermore, studies have reported no discernible toxic effects or cellular damage associated with its administration [105,106].

Such findings underscore the potential of *H. erinaceus* as a complementary and alternative medicine for the management of mental health.

3.6. Psilocybe cubensis

Psilocybe cubensis, colloquially referred to as "sacred mushrooms" or "hallucinogenic mushrooms," is a well-recognized species within the genus Psilocybe [107].

Within its genus, which encompasses 144 identified species, a notable proportion, approximately 81 species, exhibit psychoactive properties. *P. cubensis* stands out as one of the most accessible mushrooms to cultivate and possesses potent hallucinogenic effects [107,108].

According to TCM, *Psilocybe cubensis* nourishes the *Qi*, as the other mushrooms.

The utilization of psychoactive mushrooms has been evidenced in petroglyphs and murals discovered in regions spanning from Siberia to Africa and Spain, indicating a longstanding fascination with these organisms throughout human history [109]. Recently, a resurgence of interest in psilocybin and Psilocybe species has transpired, driven by mounting evidence supporting psilocybin's efficacy in treating various mental health disorders, notably anxiety and depression [110-116]. This renewed interest has catalyzed a proliferation of clinical studies demonstrating the therapeutic potential of psilocybin [117], alongside basic research endeavors that have elucidated the enzymatic pathways and underlying genetic mechanisms governing psilocybin and psilocin biosynthesis [118,119].

Psilocybin exerts its pharmacological effects by acting as a potent agonist at 5-HT_{2A} receptors, alongside moderate agonist activity at 5-HT_{1A} and 5-HT_{2C} receptors [120]. Notably, 5-HT_{2A} receptors are predominantly localized within the thalamus and cortex regions of the brain. Activation of 5-HT_{2A} receptors within the thalamus, a critical area responsible for sensory input processing, has been observed to induce a decrease in thalamic activity. Consequently, this modulation contributes to the manifestation of sensory alterations commonly described as hallucinations [121,122].

Recent studies have demonstrated the significant procognitive and mood-enhancing effects of *Psilocybe cubensis*. However, the evidence remains limited, particularly within preclinical research. *Psilocybe cubensis* administration was found to increase pain thresholds and reduce anxiety levels. In conclusion, the effects of *Psilocybe cubensis* on PTSD-like behavior and locomotor activity appear to be short-term, whereas its effects on pain thresholds and anxiety are sustained over the long term [123].

However, despite these advancements, significant gaps remain in our understanding of Psilocybe, particularly regarding its diversity, distribution, taxonomy, ecology, and

chemical properties. Furthermore, the natural roles and functional significance of psilocybin and psilocin are still not well understood [124,125].

4. Summary

Table 1 provides an overview of the effects of selected medicinal mushrooms on mental health from three perspectives: historical and traditional applications, TCM principles and contemporary scientific findings. The table aims to bridge the gap between ancient knowledge and modern science, illustrating the multifaceted roles these mushrooms play in mental health care.

Table 1. Overview of the effects of selected medicinal mushrooms in mental health

Medicinal Mushroom	Traditional use / Naturopathy	TCM	Scientific research
Agaricus blazei	-	Regulates *Qi* flow	Antidepressant-like effects Anxiolytic-like activity Maintenance of myenteric plexus homeostasis
Trametes versicolor	-	Harmonizes *Qi*	Alzheimer's disease
Ganoderma lucidum	Tranquilizing properties Restlessness Insomnia Palpitations	*An-Shen* effect Mobilize *Qi*	Neurodegenerative diseases Antidepressant and anxiolytic potential
Cordyceps sinensis	Energizing properties	Enhances *shen* Harmonizes *Qi*	Antidepressant effects
Hericium erinaceus	Calms the mind	Nourishes *Qi*	Neurological disorders Depressive symptoms Anxiety
Psilocybe cubensis	-	Nourishes *Qi*	Anxiety Depression Procognitive and mood-enhancing effects

This table provides a comprehensive view of how medicinal mushrooms have been perceived and utilized across different traditions and how modern science is validating these practices. By integrating traditional knowledge with contemporary research, it highlights the ongoing potential of these natural remedies in mental health treatment.

5. Conclusions

The exploration of medicinal mushrooms, deeply rooted in TCM and Naturopathy, reveals significant therapeutic potential, particularly in the field of mental health. Mushrooms such as *Agaricus blazei, Trametes versicolor, Ganoderma lucidum, Cordyceps sinensis, Hericium erinaceus*, and *Psilocybe cubensis* are rich in bioactive compounds, including polysaccharides and triterpenoids, which contribute to their various health benefits.

Recent scientific research supports the traditional uses of these mushrooms, highlighting their efficacy in reducing symptoms of anxiety, depression, cognitive decline, and other mental health conditions. While TCM integrates these mushrooms in comprehensive therapeutic approaches to enhance overall outcomes, modern Naturopathy emphasizes their role in supporting the body's natural healing processes.

However, the evidence of the beneficial impact of medicinal mushrooms on human mental health is still limited, with a notable lack of large human clinical trials using standardized procedures and methodologies. Many of the studies conducted so far have only been done in animals. The rising interest in mycotherapy calls for a concerted effort from the scientific community to broaden clinical trials and to ensure the development of supplements with confirmed safety and genetic purity.

Integrating traditional knowledge with contemporary scientific research may pave the way for new treatments and interventions to support mental well-being. As the global mental health crisis persists, the integration of these natural compounds into mental health care presents a viable, culturally acceptable, and potentially effective alternative or complement to conventional treatments.

Author Contributions: Conceptualization: R.S.; Formal Analysis: R.S.; Investigation: R.S. and M.F.; Methodology: R.S.; Project Administration: R.S.; Supervision: R.S.; Writing – Original Draft Preparation: R.S.; Writing – Review & Editing: R.S. and M.F. All authors have read and agreed to the published version of the manuscript.

Acknowledgements: This research was presented at the 1st Portuguese Symposium on Unconventional Therapies for Mental Health on 15 July 2024.

Conflicts of Interest: The author declares no conflicts of interest.

Funding: This research received no external funding.

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