

COMMUNITIES AND ATTITUDES ON THE USE OF HERBAL REMEDIES IN THE TREATMENT OF COVID-19: A REVIEW

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Abstract

The established antiviral properties exhibited by certain medicinal plants, coupled with additional advantages such as minimal adverse effects and cost-effectiveness, have elicited a heightened inclination among the public towards natural therapies for the management of diseases. Amid the COVID-19 pandemic, anecdotal reports from residents across seven countries in Latin America and the Caribbean (LAC) underscore the inclination of healthcare professionals and spiritual leaders to recommend specific medicinal plant interventions. Notably, *Zingiber officinale*, *Curcuma angustifolia*, and *Allium sativum* emerge as frequently cited species employed by communities in Nepal, with *Zingiber officinale* Rosc., honey (Mel), garlic (*Allium sativum* L.), and perilla (*Perilla frutescens* (L.) Britt.) being prevalent herbal remedies in Vietnamese communities, especially for addressing respiratory symptoms associated with COVID-19. The observed self-administration of these herbal medicines may serve as a catalyst, motivating researchers within the pharmaceutical industry to conduct comprehensive scientific assessments to validate their efficacy, reliability, and optimal dosage.

Keywords: COVID-19, Attitude, Anecdotal, Herbal remedies, Self-medication.

Introduction

The World Health Organization (WHO) officially declared COVID-19 a global pandemic on March 11, 2020. The novel coronavirus infection originated in Wuhan, Hubei province, China [4]. While the WHO Director-General announced a new outbreak on May 5, 2023, it did not meet the primary criteria for classification as a Public Health Emergency of International Concern (PHEIC) at that time. Nevertheless, strategies for disease prevention and treatment persisted [5]. The endorsement of antiviral activity in select medicinal plants, alongside additional benefits such as reduced adverse effects and cost-effectiveness, has cultivated a heightened public inclination towards natural therapeutic approaches for the management of various diseases, including viral respiratory infections [7]. This review endeavors to examine the prevalence of utilizing medicinal herbs globally to alleviate COVID-19 symptoms during the ongoing pandemic.

Review and Discussion

The attitude toward the use of medicinal plants by communities in various regions has been the subject of numerous surveys. Despite evidence indicating a positive inclination of a considerable percentage of the population towards herbal medicine in combating various pathological conditions, instances of self-medication without physician supervision or consultation have been reported [1]. Husaini and colleagues documented anecdotal claims made by residents of communities in seven countries (Belize, Jamaica, Haiti, Bolivia, Brazil, Colombia, and Peru) within Latin America and the Car-

ibbean (LAC) during the COVID-19 pandemic. *Taraxacum officinale* (Dandelion), *Chenopodium ambrosioides* (Wormseed plant), *Allium cepa* (Onion), *Pinus spp.* (Pine Tree), *Ananas comosus* (Pineapples), *Persea Americana* (Avocados), *Gossypium* (Cotton plant), *Moringa oleifera* (Moringa), *Eucalyptus spp* (Eucalyptus), *Petiveria alliacea* L (Mucuraca), *Piper aduncum* (Matico, spiked pepper, buddleja globose), *Cymbopogon citratus* (Fever grass, lemongrass, yerbaluisa), *Rutaceae spp.*, *Verbena officinalis* (Vervain, Verbena) and *Curcuma longa* (Turmeric) were among the medicinal plants identified as being commonly used in these regions. Each represents a distinct plant family and each was documented as being acclaimed by various authorities such as medical practitioners, community leaders, herbalists, trained respiratory therapists, voodoo leaders, vendors, and indigenous community leaders. The beneficial phytochemicals present in various medicinal plants, along with their pharmacological effects capable of preventing or ameliorating COVID-19 symptoms, have been substantiated by multiple authors through *in vitro*, *in vivo*, and clinical trials [8]. However, a cross-sectional ethnobotanical study conducted by da Silva et al. among the urban population of southeastern Brazil revealed that, despite the prevalence of *Melissa officinalis* as a commonly used natural therapy, followed by *Peumus boldus* Molina and *Mentha spicata*, there was no observable increase in the demand of these plants to manage COVID-19 symptoms during the pandemic. Reportedly *Melissa officinalis* and *Mentha spicata* were predominantly used for anxi-

ety during the novel coronavirus outbreak, with the authors attributing this to an increase in the prevalence of anxiety and depression during the pandemic [2]. Recent *in vivo* research has validated the anxiolytic properties of Hydroxycitronellal, a monoterpene found in *M. officinalis* essential oil. This is attributed to the interaction of the substance with the γ -amino butyric acid-A (GABAA)-ergic system, the stimulation of GABAA receptors, and the subsequent reduction of neuronal excitation [6]. Similarly, *M. spicata*, which is rich in phenolic compounds and tannins, has demonstrated anxiolytic potential through the modulation of GABAA receptor function [3].

The results from a survey conducted by Khadka and colleagues [9] among both urban and rural respondents in Nepal revealed an increase in the use of medicinal plants during the COVID-19 pandemic. Contrary to expectations, younger and more educated individuals exhibited increased awareness of the benefits of medicinal plants during the pandemic. Prior to the COVID-19 outbreak, those with higher levels of education were less likely to acknowledge the advantages of medicinal plants compared to conventional therapy. Notably, *Zingiber officinale*, *Curcuma angustifolia*, and *Allium sativum* were the most frequently reported species in use, with the predominant method of preparation involving grinding the plant parts, boiling them with hot water or milk, and subsequent oral administration.

In Vietnam, according to a survey conducted by Nguyen et al. [10], ginger (*Zingiber officinale* Rosc.), honey (Mel), garlic (*Allium sativum* L.), and perilla (*Perilla frutescens* (L.) Britt.) were the most commonly consumed herbal medicines. These were primarily used for treating respiratory COVID-19 symptoms and fever. A substantial number of respondents expressed a belief in the efficacy of natural products, apparently obtaining information regarding herbal medicine primarily via consultations with medical doctors.

Conclusion

Anecdotally, the practice of self-medication holds the potential to stimulate investigators within the pharmacological industry towards a more extensive scientific evaluation of the validity, reliability, and optimal dosing of botanical medicines. Additionally, there exists a critical concern surrounding the need to educate the public on the appropriate use of medicinal plants. Furthermore, the mandatory integration of courses on phytotherapy into the formal training curriculum for physicians is deemed imperative.

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