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Traditional Medicines Guidelines for COVID 19: A Review

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ABSTRACT

Background: Since the beginning of time, humanity has experienced severe natural disasters on occasion. At the end of 2019, a novel coronavirus identified as 2019-nCoV; and later known as SARS CoV 2 merged in the Chinese city of Wuhan, in the province of Hubei. The world faced global health emergency because, lack of any definitive treatment of COVID-19 in any healthcare systems of the world. In this health crisis, academic knowledge holders of traditional medical healing practices in the global specially in Africa and Asia; prepared preventive, promotive and post recovery guidelines; and curative management protocol and endorsed by authorities of respective countries.

Materials and Methods: The online published guidelines and literatures regarding COVID 19 were searched on google scholar, PubMed, Scopus, DOAJ, ScienceDirect, Henari, Web of Science using key words such as COVID 19, guidelines, management protocol, Traditional Medicines, Ayurveda, Naturopathy, Homeopathy, Yoga, Sidhha, Unani, Traditional Chinese Medicine, Complementary and Alternative Medicines (CAM). The websites of Ministry of Health and their health departments of the countries used traditional medicines for prevention and control of COVID 19 were surfed. The literatures or guidelines mentioning immune enhancer, single drugs, prevention, diagnosis and treatment; and polyherbal formulations were entertained for analysis and presentation in this review.

Results and Discussion: These guidelines emphasize the importance of identifying best practice to manage COVID 19 applying appropriate and rigorous evidences from classical literatures as well as scientific publications on the procedures and medication of COVID 19 in recent era.

Conclusion: The guidelines of traditional medicines for COVID-19 were found to be safe and effective to mitigate and control spread of Corona virus; and recommended medications were also effective in symptomatic relief from the infection.

Key words: Ayurveda, Covid-19 Guidelines, Traditional medicines, Medicinal herbs, Herbal Products

INTRODUCTION

Since the beginning of time, humanity has experienced severe natural disaster on occasion. At the end of 2019, a novel coronavirus identified as 2019-nCoV; and later known as SARS CoV 2 was evolved in the Chinese city of Wuhan.¹ The pandemic spread like a wave and hit people who were least prepared to handle it. Furthermore, COVID-19 was more than just a health emergency; by stressing every nation it contacted, and had the ability to produce catastrophic socioeconomic, and political crises that has been left deep scars.²

Additionally, every attempt had been taken to stop this epidemic at all costs, even at the risk of negative outcomes in the future. Countries all over the world used lockdown strategies, which included limiting travel, isolating residents, and avoiding large gatherings like sporting events, concerts, and even schools; and then conducting contact tracing, isolating,

and treating the contacted individuals, in an effort to slow the spread of the virus.³

In order to stop this disease, WHO also announced to use indigenous and traditional medical practices of their own which have been practicing since many centuries to stop this disease.

Many medicinal herbs with proven clinical benefits are used in traditional medicine to treat SARS CoV-2 survivors and enhance their health. One more recent step toward symptom relief and better health may be obtained from administration of the aqueous and alcoholic extraction of bioactive components from certain plants and the safe dosage delivery to patients during clinical trials.^{4,5}

The virus showed various unspecific symptoms, ranging from mild to severe. Fever (98%) is the most frequent manifestation that is reported by patients, followed by cough (76%), myalgia or fatigue (44%), sputum production (28%), and headache (8%),⁶ which are common symptoms in Flu.

In Asian countries, Ayurveda, Chinese Traditional Medicines (TCM), Homeopathy, Acupuncture, Unani, Korean Oriental Traditional Medicines, Japanese Oriental Traditional Medicines, Herbal Medicines, Yoga & Naturopathy and Sow-Rigpa are popular traditional medicines. In western, Herbal medicines is mostly used as alternative medicines. These are the ancient and traditional medicinal practices and compendia of huge medical knowledge including respiratory tract diseases such as to treat flu-like symptoms. Moreover, the pandemic crisis also brought us to the need of the hour for prevention and control, curative management and alleviating complications related to the current situation.

Therefore, traditional medical system experts recommended immune enhancers, single and polyherbal formulations for prevention and symptomatic relief from COVID 19. This review aimed to compile clinical uses in classical literatures, ethnomedicine and folklore medicines for flu like symptoms and their relevant recent evidences in antiviral effects on which several traditional medicines guidelines were issued worldwide.

MATERIALS AND METHODS

The online published guidelines and literatures regarding COVID 19 were searched on google scholar, PubMed, Scopus, DOAJ, ScienceDirect, Henari, Web of Science using key words such as COVID 19, guidelines, management protocol, Traditional Medicines, Ayurveda, Naturopathy, Homeopathy, Yoga, Sidhha, Unani, Traditional Chinese Medicine, Complementary and Alternative Medicines (CAM). The websites of Ministry of Health and their health departments of the countries used traditional medicines for prevention and control of COVID 19 were surfed. The literatures or guidelines mentioning immune enhancer, single drugs, prevention, diagnosis and treatment; and polyherbal formulations were entertained for analysis and presentation in this review.

RESULTS AND DISCUSSION

Traditional Medicines Guidelines for COVID-19: During the pandemic, Asian and Western countries issued advisories and guidelines to mitigate the transmission and prevention of it. There was no vaccine and definitive management of the disease in the initial years. We have only a way to manage the symptoms and reduce the risk of case fatality during the crisis. In this context, these work of traditional practitioners from the worldwide was greatly appreciated and found effective in reducing case fatality mostly in Asian countries. Some of the most practiced traditional guidelines have been reviewed and data presented on the related topics.

1.1. Ayurveda

Ayurveda is the oldest traditional medical practice in south Asian countries. It is nowadays also called Indian System of medicines; is commonly practiced in India, Nepal and Srilanka. It is also popular in Bangladesh and Pakistan.

1.1.1. COVID 19 and its diagnosis in Ayurveda

In Ayurveda, epidemics are discussed under the term of *Janapadodhwamsa*⁷ (epidemic diseases) These diseases can be considered as either airborne or waterborne occurring due to soil contamination or conditions arising due to weather or seasonal hazards. Furthermore, diseases are classified as *Adidaivika Bala Pravritta Vyadhi* (diseases arising due to such causes that cannot be controlled by human intelligence), *Sansargaja* or *Upasaragaja* (transmitted directly from infected persons to healthy persons) and *Aupasargic Rogas* (communicable & contagious diseases).

Since newly emerging COVID-19, there wasn't the direct description available in Ayurveda classical literatures, however a vigilant study of signs and symptoms of the disease from previously contacted patients helped to prepare guidelines and management plan. The signs and symptoms of COVID-19 appeared within 2 to 14 days after exposure and noted fever, cough and shortness of breath or difficulty breathing. Other symptoms were tiredness, aches, running nose, sore throat, headache, diarrhea, vomiting; whereas some people had experienced the loss of smell or taste, memory loss, loss of hearing. These signs and symptoms were more likely to different categories of *Jwara* (fever) described in Ayurveda. Furthermore, the complications of *Jwara* are *Swasa* (difficulty breathing), *Murcha* (fainting), *Aruchi* (anorexia), *Vamana* (vomiting), *Trishna* (thrust), *Atisara* (diarrhea), *Vishada* (depression), *Hikka* (hiccough), *Kasa* (cough), *Angamardha* (Bodyache), which were the symptoms of COVID-19 too.

Considering all these signs and symptoms in classics in correlation with signs and symptoms of the COVID-19; it was contemplated as a *Kapha-vata Sansargaja Jwara*⁸ (an infectious fever like influenza), of course, with *Pitta*⁹ (increased metabolic state) association in the beginning. But it acquires the status of *Sannipata Jwara*¹⁰ (fever caused by involvement of all humors), in certain

subset of patient as the condition progresses. Due to compromised immunity (*Rogi-bala*), the co-existing *Pitta*, even mild is causing *Syandana* (oozing condition) and *Shoshana*¹¹ (absorption) in the chest progressively, which can't be resisted by the body. This pathological process can be described as a *Dhaatupaaka* (quickly destruction or suppuration of tissues) which causes a dysregulated host response; ultimately referred to *Sannipaataja jwara*.¹² This results in the rapid instability of *Ojus* (vigor or essence of vitality) leading to sepsis and eventually septic shock.

Because of the *Syandana* and *Shoshana* property of intervening *Pitta*, the *Jwara* may end up in the fatal forms of *Sannipaataja Jwara*; of which two types of special fevers noteworthy mention here such as *Vata* predominant *Sannipaataja Jwara* titled as *Visphaaraka*¹³ (a type of fever associated with cough, syncope, convulsion) and *Vata-kapha* predominant *Sannipaata Jwara* titled *Sheekhrakaari*.¹⁴ The disease successively progresses from *Kapha-vata Sannipaata Jwara* and its aggravation, and enters to the stage of initiation of *Dhatu paka*, due to unchecked activity of the *Pitta dosha*, further *Dhatu paka* proceeds and *Swasa* coming forwards as an *Upadrava*. At last, *Sannipaata jwara* titled as *Vispharaka* or manifests and becomes fatal which needs technological support along with *Aatyayika chikitsa* (emergency management)

On the basis of categorization of *Jwara Awastha* (fever category), it was planned for promotive, preventive, and curative aspects through Ayurveda; and brought a hope to fight with the pandemic. The complications included pneumonia in both lungs and multi organs failure which was very much similar to *Jwara vyapada* (fever complications) indicating difficulty in management. After the initial critical stage, the inflammatory response is gradually resolved, the damaged organ gradually recovers, and some of the damaged organs enter fibrosis and chronic stage, such as chronic critical illness, persistent inflammation, immunosuppression and catabolism syndrome.

The management of these infectious diseases can be either preventive or curative. Prevention can be preferred by *Shodhana* (Bio-purification) and *Rasayana* (immuno-modulatory drugs) in the risk zone so that infectious agents can be reduced low; and immunity of individual can be enhanced. The curative management was targeted to reduce severity of infection with symptomatic treatment.

1.1.2. Preventive measure

In Nepal and India, it was found similarity with advisory and guidelines on medications and therapies.

1.1.2.1. Medications

Single medicinal herbs preparation: In Nepal's Ayurveda guidelines, apparently healthy persons were suggested to intake 3gm of *Ashwagandha* (dried root of *Withania somnifera* Linn.) powder once per day, *Guduchi swarasa* (fresh stem juice of *Tinospora cordifolia* (Willd.) Hook. f. and Thoms) in 10-20 ml or decoction prepared from dried stem in 40-80 ml or a cup of

tea prepared with the plant stem can be taken in empty stomach. In practices of Covid-19, experts found blood pressure lowering effect of *Tinospora cordifolia* juice or decoction.¹⁵ *Amalaki churna* (powder of *Embllica officinale* fruit) was advised to intake in the dose of 6 gram twice daily with Luke warm water routinely. To enhance digestive power, the guidelines recommended to use spices such as *Besara* (Turmeric; *Curcuma longa* Linn.) rhizomes, *Jeera* (Cumin; *Cuminum cyminum* Linn.) fruit, *Maricha* (black pepper; *Piper nigrum* Linn.) fruit, *Dhaniya* (Coriander; *Coriandrum sativum* Linn.) leaves, *Daalchini* (Cinamon; *Cinnamomum zeylanicum* Linn.) stem bark, *Timur* (Toothache tree; *Zanthoxylum armatum* DC.) and *Lasun* (Garlic; *Allium sativum* Linn.) for cooking routinely.¹⁶ *Kirattikta* (*Swertia chirayita*) and *Neem* (*Azardichta indica*) decoction were recommended in the condition of fever. One teaspoonful or 3-6 gram of *Yastimadhu* (*Glycyrrhiza glabra*) powder suggested to intake with luke warm water twice daily till relief from the symptoms.

Hot beverage or herbal drink¹⁷ (*Kadha*) made from *Tulsi* (holy Basil; *Ocimum sanctum* Linn.), *Daalchini* (Cinamon; *Cinnamomum zeylanicum* Linn.), *Marich* (Black Pepper; *Piper nigrum* Linn.), *Shunthi* (Dry Ginger; *Zingiber officinale* Linn.) and *Kalo Kisamisa* (Raisin; *Vitis nucifera* Linn.) or as per availability of drugs has been suggested to take once or twice with addition of jaggery (natural sugar) and fresh Lemon juice for taste. Two tablets of *Samsamni Vati* or *Giloyaghan vati* advised to intake twice daily with Luke warm water for immune building in apparently health individual upto 7-15 days. Its primary stage can be treated with doing *Langhana* (avoid meal) by *Shunthi jal* and *Shadangapaniya* as per necessary

Polyherbal formulations: *Chyavanaprash*¹⁸ (polyherbal formulation) two spoonful or 10 gram in the morning or fresh fruit of *Embllica officinale* Gaertn.; or in absence of the above, for medication, 1-2 table spoonful or 3-6 grams *Chitraka Haritaki* (major ingredients of *Plumbago zeylanicum* and *Terminalia chebula*) twice daily with Luke warm water or Luke warm milk, and 3 grams of *Mahasudarshan* powder or 40 ml decoction in case of fever twice daily suggested to intake. The guidelines suggested to intake 40-80 ml of *Dashmoola* or *Pathyadi kwatha* when generalized bodyache was noticed.¹⁹

Rasayana chikitsa (Rejuvenating therapy) was advised to continue for 5-30 days which included 3 gram of powder or 2 capsules of *Ashwagandha*²⁰ (*Withania somnifera*), 3 gram powder or 2 capsules/tablets/vati of *Brahmi Vati* and 2 table spoonful of *Chyavanaprash*²¹ (Polyherbal formulation) twice daily with Luke warm water. Sugar free *Chyavanaprash* must be prescribed for Diabetic Patients.

1.1.2.2 Lifestyle modification

In an amount of 2-3 litres of Luke warm drinking water was advised to intake throughout the day.²² For the nasal care, *Anu taila* (oil drops processed in goat milk and medicinal herbs) or

Sesame oil or Mustard oil or Cow's Ghee were recommended to apply as *Pratimarsh Nasya* (trans nasal medication) in both the nostrils twice a day i.e. morning and evening.²³ For oral cavity care, *Gandusha*²⁴ (Oil pulling therapy) were recommended to carry out with taking one table spoonful of sesame (*Sesamum indicum* Linn.) oil or Mustard (*Brassica nigra* Linn.) oil in mouth; and to swish in the mouth for 2 to 3 minutes and then to spit it off followed by warm water rinse once or twice in a day.²⁵ The guidelines recommended to take steam inhalation with 1-2 fresh Mint (*Mentha arvensis* Linn.) leaves and/or Tulsi (*Ocimum sanctum* Linn.) leaves and Turmeric (*Curcuma Longa*) powder of 3-5 gram in one litre of water once or twice in a day for 5-10 minutes.^{26,27} The guidelines included popular regimen of allergic rhinitis namely Golden Milk; a combination of half tea spoon of *Besara* (Turmeric) powder and half tea spoon of Jaggery as own taste in 150 ml of hot milk once or twice daily.^{16,28} In the presence of fever, the guidelines recommended *Langhana* (avoid meal) followed by *Shunthi jal* (watery preparation of *Curcuma longa*).

Dhoopana (fumigation) in home²⁹ was suggested to carry out by burning mixture of *Guggulu* (*Commiphora mukul* (Hook. ex Stocks) Engl., *Neem* (*Azardichta indica* Linn.) leaves, *Vacha* (*Acorus calamus* Linn.) rhizomes, *Kutha* (*Saussurea lappa* Clarke) root, *Harro* (*Terminalia chebula* Retz.) fruit, *Sarsapa* (*Brassica compestris* Linn.) seed, *Lavana* (*Syzygium aromaticum* Linn.) flower bud, *Lasun* (*Allium sativum* Linn.) bulb, *Pyaja* (*Allium cepa* Linn.), *Yava* (*Hordeum vulgare* Linn.), *Titepati* (*Artemisia vulgaris* Linn.) and Ghee to sterilize resident area.

1.1.3. Symptomatic relief of patients with positive case of COVID-19 having no symptoms

Polyherbal formulations: In this stage, 2 gram of *Trikatu Churna*³⁰ (powder preparation of *Piper longum* and *Piper nigrum* fruits; and *Zingiber officinale* rhizomes) with decoction of *Yashtimadhu* (*Glycyrrhiza glabra*) powder in decoction recommended twice daily with Luke warm water or with decoction of *Dashmoola* (root of *Solanum indicum*, *Solanum xanthocarpum*, *Desmodium gangeticum*, *Uraria picta*, *Tribulus terrestris*, *Aegle marmelos*, *Premna integrifolia*, *Oroxylum indicum*, *Stereospermum suaveolens* and *Gmelina arborea*) or *Pathyadi* (a preparation of equal proportion of dry fruits of *Terminalia chebula*, *Terminalia bellerica* and *Embllica officinalis*; dry whole plants of *Andrographis paniculata*, *Curcuma longa* rhizomes, dry leaves of *Azadirachta indicum*, dry stem of *Tinospora cordifolia*). Two tablets of *Chitrakadi Vati* recommended to prescribe twice daily with Luke warm water before meal. In addition, 2 gram of *Trikatu Churna* with *Dashmoola* or *Pathyadi kwatha*¹⁹, 3 gram of *Sudarshana Churna*, 2 gram of *Talisadi churna*³¹ or *Sitopladi Churna*³², 10-12 gram of *Vasavaleha/ Kantakaryavleha*³³ and 2 tablets of *Samsamni Vati* or *Giloyaghan vati*³⁴ advised to be further prescribed twice daily with Luke warm water.

Rasausadhi (metallic preparation): In severe condition, 250 milligrams of *Shanjeevani Vati*³⁵, 125-250 mg of *Tribhuvan kirti rasa*³⁶, and 60 milligrams of *Nardeeye Laxmivilasa Rasa*³⁷ were

also recommended to prescribe twice daily with luke warm water.

In India, AYUSH guidelines of Ayurveda was almost found similar to the guidelines issued by Ministry of Health and Population, Government of Nepal. Srilankan Ayurveda guidelines was also in the line of Nepal and India.

1.1.4. Post recovery therapy

The guidelines strongly recommended to prevent recurrence and to restore health with management for recovery and rejuvenation. In this condition herbal drugs like *Guduchi* (*Tinospora cordifolia*) and *Pippali* (*Piper longum*), *Draksha* (*Vitis nucifera*) and *Vasa* (*Adhatoda vesica*) recommended to use for at least 30 days. *Haridra churna* (powder of *Curcuma longa*) also suggested to use after clinical recovery. Cardioprotective, Hepatoprotective and renal protective drugs like *Arjuna Churna* (powder of *Terminalia arjuna*), *Amalaki Churna* (powder of *Phyllanthus emblica*), *Bhumyamalaki* (*Phyllanthus niruri*), *Punarnava kwatha* (decoction of *Boerhavia diffusa*) advised to intake for 30-45 days after clinical recovery to combat toxicity produced from antiviral drug therapy.

It was appreciative work of Ayurvedacians of Nepal to recommend immune boosting prescription for recovered patients from COVID 19. It was found in Indian; and merely in Srilankan Ayurveda's guidelines.

1.1.5. Commonly used medicinal herbs and Ayurvedic products

In Nepal, according to Corona positive patients, decoction of fresh Indian gooseberry (*Tinospora cordifolia*), turmeric (*Curcuma longa*), holy basil (*Ocimum sanctum*), ginger (*Zingiber officinale*), Night flowering jasmine (*Nyctanthes arbortristis*) with jaggery were consumed a glass twice daily for 15 to 30 days and got rid of corona virus.³⁸

In India, Pronto Consult, a health research company, conducted a survey and discovered that immune boosters were becoming more popular in both pharmaceutical and food-related items. Ninety two out of every hundred medical bills were for immunity-boosting products; these included detox brands and items with ingredients like honey, *chyawanprash*, ginger, *moringa oleifera*, probiotics, green tea, *amla* (gooseberry), *tulsi* (basil), *haldi* (turmeric), lemongrass, *karela* (bitter gourd), *jamun* (berry), and saffron.³⁹

In Sri Lanka, people used different types of medicinal plants and natural products as protective measures during the COVID-19 pandemic. To combat COVID-19, the Sri Lankan Ayurvedic Department launched an immunization drink called "*Suwadharani*" that is made entirely of natural ingredients.⁴⁰ To ward against COVID-19, the Ayurvedic Department also suggested drinking beverages made from ginger (*Zingiber officinale*), coriander (*Coriandrum sativum*), garlic (*Allium sativum*), *Weniwelgeta* (*Coscinium fenestratum*), lime (*Citrus aurantiifolia*), *Heen Arathitha* (*Alpinia calcarata*), licorice (*Glycyrrhiza glabra*), *Tulsi/Heen Maduruthala* (*Ocimum tenuiflorum*), *Adatoda* (*Justicia*

adhatoda), and a few other medicinal plants.⁴⁰

In India, Ayurvedic medicines for respiratory problems such as *Tribhuvankirti Rasa*, *Mahalaxmi Vilas Rasa*, *Laghmalini Vasant Rasa*, *Suvarnamalini Vasant Rasa* and those mentioned in the Ministry of AYUSH's guidelines for practitioners had highly consumed during COVID-19 pandemic.⁴

1.2. Yoga and Naturopathy

The Nepalese guidelines had included immune enhancing daily practice of Yogasana⁴² or therapeutic Yoga that includes *Surya Namaskara* (Sun salutation), *Dhanurasana* (Bow posture), *Gaumukhasana* (Cow posture), *Ustrasana* (Camel posture), *Bhujangasana* (Cobra posture), *Setubandhanasana* (Bridge posture), *Padmasana* (Lotus poses) for 10 minutes. The guidelines further mentioned *Pranayama*⁴³ that are *Anulom* and *Vilom* (controlled breathing), *Kapalbhati* (Skull shining breathing technique), *Bhastrika* (inhalation and exhalation), and *Bhramari* (breathing)/breathing exercise (chair breathing exercise and hand in and out breathing exercise) for 10 minutes. Loosening exercise (Spinal twisting exercise, joint mobilization exercise) for 10 minutes and Meditation⁴⁴ (Omkar chanting, meditative/relaxing music therapy) for 15 minutes in the morning for at least 30-45 minutes collectively. Yogic cleansing therapy under guidance of expert and heliotherapy were also suggested for 30 minutes in the morning.

Ministry of AYUSH, Government of India issued Naturopathy Guidelines for Naturopathy Practitioners for COVID 19 pandemic⁴⁵ which only included guidelines on usages of preventive measures, immune enhancer and single herbs. Yoga Guidelines for Yoga Practitioners for COVID 19 pandemic⁴⁶ suggested guidelines on usages of preventive measures.

Exploring traditional Indian system of medicines, such as Naturopathy and Yoga, can provide potential benefits in improving host immunity and mitigating the severity of the infection. The COVID-19 pandemic has had a major effect on mental health, especially in populations that are more susceptible.⁴⁷ Anxiety, depression, and stress-related psychological symptoms might weaken the immune system and make people more susceptible to viral upper respiratory tract infections.^{48,49} Yoga effectively treats psychosomatic and lifestyle diseases, while naturopathy targets the underlying causes rather than the symptoms.⁵⁰ Physical medical procedures such as massage and manual manipulation, as well as correct structural disintegration, are supported by yoga for systems that are weak or injured. In addition to using specialized natural chemicals and nutritional supplements, naturopathy also uses fasting therapy to treat physical pathologies.⁵¹ In order to combat infections, these natural remedies support the immune system's equilibrium. Additionally, hydro modalities that assist mucociliary clearance and the bronchodilator action that lessens upper respiratory tract infections include *jalaneti*, warm turmeric salt gargling, and steam inhalation or local steam application. Numerous studies documented improvements in mean arterial

pressure (MAP), systolic and diagnostic blood pressure, pulse rate (PR), pulse pressure (PP), rate pressure product (RPP), double product (DoP), and the possible immunomodulatory effects of hydrotherapy treatments in COVID-19 patients following yoga and naturopathy interventions.^{52,53} Nepalese and Indian guidelines were found approximately similar in contents for Yoga postures and meditation. Nepal suggested Naturopathy not in separate guidelines; it was included within the Ayurveda guidelines.

1.3. Homeopathy

Nepal included *Arsenicum album*, *Gelsimium*, *Bryonia*, *Camphor* and *Aconite* for prevention; and *Byonia*, *Gelsimium*, *Eupatorium perfoliatum*, *Camphor*, *Antium Tart* and *Phosphorus* in COVID 19 preventive and curative management protocol.⁵⁴

Ministry of AYUSH, Government of India issued Homoeopathic guidelines for Homoeopathic practitioners for COVID 19 pandemic⁵⁵ which were only included guidelines on usages of preventive measures, immune enhancer and single herbs.

AYUSH's Homeopathy guidelines advised *Arsenic Alb*, *Bryonia Alb*, *Gelsemium Sempervirens* and *Pulasatilla Nigricans* for prevention and treatment of COVID 19.⁵⁶ It can be inferred that homeopathy guidelines of Nepal and India were somewhat found similarity with advice of medicines.

1.4. Unani

Ministry of AYUSH, Government of India issued Unani guidelines for Unani practitioners for COVID 19 pandemic⁵⁷ which were included guidelines on usages of preventive measures, immune enhancer, single herbs, herbal formulations and registered herbal preparations.

Unani Single Drugs such as *Behi dana* (*Cydonia oblonga*), *Unnab* (*Zizyphus jujuba*), *Sapistan* (*Cordia myxa*), *Karanjwa* (*Caesalpinia bonducella*) advised to use in COVID 19 for immune boosting. Unani Formulation; *Tiryag-e-Arba* used in the dose of 3-5 gm with lukewarm water. *Roghan-e-Babuna Sada* on chest was advocated. *Arq-e-Ajeeb* in 2-5 drops was advised to inhale. Unani guidelines recommended the following herbs for antiviral activities which are *Kalonji* (*Nigella sativa*) in 1-2 gm, *Seer* (*Allium sativum*) in 2-3 gm, *Zanjabeel* (*Zingiber officinale*) in 5 gm, *Aslassus* (*Glycyrrhiza glabra*) in 5-10 gm, *Afsanteen* (*Artemisia absinthium*) in 3-5 gm, *Tukhm-e-Kasoos* (*Cuscuta reflexa*) in 15 gm (seeds), *Khayarshamber* (*Cassia fistula*) in 10-20 gm (pulp) for gargle and *Giloy* (*Tinospora cordifolia*) in 5-10 gm.

Unani formulations; *Tiryag-e-Arba* significantly reduced the duration of hospital stay and showed early recovery in COVID-19 patients compared with the control arm.⁵⁸

1.5 Siddha

Ministry of AYUSH, Government of India issued Siddha guidelines for Siddha practitioners for COVID 19 pandemic⁵⁹ which were included guidelines on usages of preventive measures, immune enhancer, single herbs, herbal formulations and registered

herbal preparations.

Prevention of COVID 19, Ministry of AYUSH issued Siddha guidelines of preventive care with advisory on drinking water prepared with herbal water infusion having half teaspoon of Chukku (Dried Ginger) / boiled in two liters of water. Hot beverages prepared with Inji thenooral or Inji (Ginger) Tea or Adhimaduram (Licorice) advised to intake. Milk intake at bedtime was restricted. if it was needed for children, it could be taken with half teaspoonful turmeric powder with Milagu (Pepper). Steam inhalation advised to inhale with Tulasi or Nochi (*Vitex negundo*) leaves or Manjal (Turmeric). Gargling was recommended to do with water boiled having a pinch of salt and Turmeric powder for not less than 3 times. Diet may include Nandu kanji (Crab soup), Pancha mudichi kanji (5-grain gruel) and Irumurai vadittha kanji (double-cooked gruel). Neem leaves fumigation was advocated for environmental sanitation. All karappan pandam (allergic foodstuff) advised to avoid in the diet.

Anti-viral Siddha Formulations such as Kaba Sura Kudineer, NilaVembu Kudineer and Visha Sura Kudineer were recommended in dose of 60 ml twice a day after food. Pavala Parpam and Velli parpam were also recommended to take in a dose of 50-100 mg twice a day with Honey.

Anti-Viral Siddha herbs such as Inji (*Zingiber officinale*); Injisurasam in a dose of 10 ml once, Thulasi (*Ocimum sanctum*); Thulasi Kudineer in a dose of 60 ml twice, Milaku (*Piper nigrum*) with Thulasi as Kudineer, Karunjeerakam (*Nigella sativa*); Karunjeeraka Chooranam in a dose of 1gm twice, Keezhanelli (*Phyllanthus niruri*); Keezhanelli samoolam in a dose of 2gm twice, Athimadhuram (*Glycyrrhiza glabra*); Athimadhura Chooranam in a dose of 1 gm twice, Vellaipoondur (*Allium sativum*); Poonduthaen, Citra mutti (*Sida cordifolia*); Citramutti Kudineer in a dose of 30 ml twice, Seenthil (*Tinospora cordifolia*); Seenthil Chooranam in a dose of 1gm twice, Manjal (*Curcuma longa*) and Elumitchai (*Citrus limonia*) Volatile oil advised to intake for treatment of COVID 19 every day.

Vembu (*Azadirachta indica*) Immunity enhancers specific to respiratory care medications such as Karpam, vatral, Vadagam and Adai were recommended. The ingredients of polyherbal formulations and singles drugs were found similar to the medicinal herbs and formulations of the guidelines of other systems of traditional medicines.

1.6. Traditional Chinese Medicines (TCM)

China issued Traditional Chinese Medicine (TCM) guideline for the diagnosis and treatment of COVID-19 which were included diagnosis and treatment, herbal formulations, registered herbal preparations. TCM guidelines hadn't been advocated for usage of immune enhancer and single herbs.⁶⁰ National Medical Products Administration of China has approved three Chinese traditional medicines products namely; *Jinghua Qinggan Granules*, *Lianhua Qingwen Granules & Capsules*, and *Xue Bi Jing Injection* to treat

patients with COVID-19.⁶¹

1.7. Korean Traditional Medicines

South Korea issued a revised version Korean medicine clinical guidance on COVID 19 pandemic⁶² and a consensus guideline of herbal medicine for coronavirus disease.⁶³ Both of them mentioned usage of immune enhancer, herbal formulations and registered herbal preparations; and however, didn't mention usage of preventive measures and single herbs.

1.8. African Traditional Medicines

There are theoretical approaches suggesting ACE2 (Angiotensin Converting Enzyme 2) could be one target for managing the COVID-19 infection.⁶⁴ Plant extracts showed an inhibitory effect on ACE. *Cerasus avium* (L.) Moench, *Alcea digitata* (Boiss.) Alef, and *Rubia tinctorum* L, inhibit ACE up to 100%. *Citrus aurantium* L.; *Berberis integerrima* Bge; *Peganum harmala* L.; and *Allium sativum* L inhibit the enzyme up to 70% or more.⁶⁵ which were commonly used in African countries such as Ethiopia.

The traditional medicines guidelines published by China and India are found in line with Ayurveda guidelines for preventive measures and curative management of COVID 19 pandemic of Nepal. The guidelines of Korean traditional medicines are slightly differed from Nepal and India which hadn't been emphasized on preventive measures to mitigate COVID 19 infection.

Indian System of Medicines are one of the oldest medical systems to treat various ailments of human being. The Ministry of AYUSH, Government of India has recognized Ayurveda, Yoga and Naturopathy, Unani, Siddha, Sowa Rigpa and Homoeopathy as a traditional system of Medicines in India, which are regulated by an independent Ministry of AYUSH. Each of these systems issued corresponding guidelines for their respective practitioners based on their own theory, standard, regulation policy, and research council to respond the crisis of COVID-19.⁶⁶ Ayurveda highly emphasizes on building harmony between mind and body to cope with various stressors.⁶⁷ Since the COVID-19 pandemic created high levels of psychological distress which induced significant impact on mental health, apparently healthy individual with poor immunity and mental health conditions were more susceptible to viral respiratory tract infections.⁶⁸ Therefore, the Ayurvedic practitioners had recommended the preventive and health promotional measures to enhance the immunity against COVID-19 probably through a psycho-neuroimmune mechanism. The major immunity enhancing measures included the consumption of warm water and herbal decoctions, oral rinsing with oil and steam inhalation mentioned in Ayurveda and Naturopathy for respiratory tract disorders.⁶⁹ During the period of the pandemic before vaccination, several initiatives had been taken to utilize the vast potential of traditional medicines or herbal medicines. The advisory of the Ministry of AYUSH listed several "Preventive measures as per Ayurvedic practices that suggested formulations including *Sunthi* (*Zingiber officinale* Roscoe.), *Lavanga* (*Syzygium aromaticum* Merr. & L. M. Perry) and *Maricha*⁷⁰ (*Piper nigrum* Linn.).

Both Chinese and Korean guidelines had been recommended *Qingfei Paidu* Decoction⁷¹, which was reported to increase the immune system and reduce inflammation by interfering with viral infection related pathways and cancer-related pathways when treating COVID-19.⁷²

A pilot study on AYUSH 64 was found safe and efficacious when it was given along with standard care in Influenza like infection; it may be used in other viral infections with pyrexia as an add-on to standard care for early recovery and better outcome.⁷³ Nepal Health Research Council conducted open level clinical trial of a polyherbal product YASH-T(*Glycyrrhiza glabra*, *Zingiber officinale*, *Piper longum* and *Piper nigrum*) decoction for mild to moderate COVID 19 positive patients that reported safe and effective to relieve symptomatically within 1-2 weeks.⁷⁴

Side-effects of excessive natural product consumption: General practitioners in India noticed an increase in patients reporting side effects during the COVID-19 pandemic. Individuals with diabetes who took high doses of fenugreek (*Methi* seeds) decoction to enhance immunity (two glasses of boiled fenugreek water per day for more than weeks) eventually experienced blood thinning, which increases the risk of bleeding events in individuals with or without liver disease. Similarly, it was discovered that consuming large amounts of *Aloe vera juice* could cause liver damage. A patient with diabetes who had been consuming two tablespoons of turmeric with water three times a day for the previous two to three months had yellow sclera in his eyes, despite his liver function tests being within normal limits. Additionally, health practitioners noted that during COVID 19, a number of patients primarily used locally based herbal remedies to increase their immunity. Regrettably, a lot of people who overindulge in items like *Chyawanprash*, kaadha (decoctions), and *Ashwagandha* powder end up with digestive troubles and other health concerns.³⁹

CONCLUSION

Traditional medicines guidelines for COVID 19 were found to be safe and effective to mitigate and control spread of Corona virus and recommended medications were also effective in symptomatic relief from the infection.

RECOMMENDATION

It is hoped that this will encourage a thoughtful and meticulous process of investigation that will clarify the contribution of traditional medicines to our future healthcare. Innovative new approaches are considered including the application of the new technologies and systems biology as a way of enhancing our understanding of traditional practice.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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REFERENCES

1. Mo P, Xing Y, Xiao Y, Deng L, Zhao Q, Wang H, et al. Clinical characteristics of refractory COVID-19 pneumonia in Wuhan, China. Clin infect dis. 2020;10.
2. Poudel K, Subedi P. Impact of COVID-19 pandemic on socioeconomic and mental health aspects in Nepal. International Journal of Social Psychiatry. 2020;66(8):74855. DOI:10.1177/0020764020942247 PMID:32650687 PMCID:PMC7443960
3. Tabish S. COVID-19 Pandemic: The crisis and the longer-term perspectives. Journal of Cardiology & Current Research. 2020;13(2):41-4. DOI:10.15406/jccr.2020.13.00472
4. Premila Devi J, Noraini W, Norhayati R, Chee Kheong C, Badrul A, Zainah S, et al. Laboratory-confirmed case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection in Malaysia: preparedness and response, April 2014. Eurosurveillance. 2014;19(18). DOI:10.2807/1560-7917.ES2014.19.18.20797 PMID:24832116
5. Assiri A, McGeer A, Perl TM, Price CS, Al Rabeeah AA, Cummings DA, et al. Hospital outbreak of Middle East respiratory syndrome coronavirus. New England Journal of Medicine. 2013;369(5):407-16. DOI:10.1056/NEJMoa1306742 PMID:23782161 PMCID:PMC4029105
6. Paudyal V, Sun S, Hussain R, Abutaleb MH, Hedima EW. Complementary and alternative medicines use in COVID-19: A global perspective on practice, policy and research. Research in Social and Administrative Pharmacy. 2022;18(3):2524-8. DOI:10.1016/j.sapharm.2021.05.004 PMID:33992585 PMCID:PMC8116135
7. Jyotirmoy S, Rekha SD. Concept of epidemic diseases in ayurveda. IJHRMLP. 2016;2(01):24.
8. Vagabhatta. Nidana Sthana, Jwaranidanam. In: Shastri HS, editor. Astanga Hrdaya - A Compendium of The Ayurvedic System of Vagbhata with the Commentaries of Sarvangasundara of Arunadatta & Ayurvedarasyana of Hemadri. Varanasi, India: Cha
9. ukhamba Surbharti Prakashan. 2016:451.
10. Vagabhatta. Chikitsa Sthana, Jwarachikitsitam. In: Shastri HS, editor. Astanga Hrdaya - A Compendium of The Ayurvedic System of Vagbhata with the Commentaries

- of Sarvangasundara of Arunadatta & Ayurvedarasyana of Hemadri. Varanasi, India: Chaukhamba Surbharti Prakashan.2016:545.
11. Vagabhatta. Chikitsa Sthana, Jwarachikitsa. In: Shastri HS, editor. Astanga Hrdaya - A Compendium of The Ayurvedic System of Vagbhata with the Commentaries of Sarvangasundara of Arunadatta & Ayurvedarasyana of Hemadri. Varanasi, India: Chaukhamba Surbharti Prakashan.2016:406.
12. Vagabhatta. Chikitsa Sthana, Raktapitta chikitsitam. In: Shastri HS, editor. Astanga Hrdaya - A Compendium of The Ayurvedic System of Vagbhata with the Commentaries of Sarvangasundara of Arunadatta & Ayurvedarasyana of Hemadri. Varansi, India: Chaukhamba Surbharti Prakashan.2016:581.
13. Vagabhatta. Chikitsa Sthana, Jwarachikitsam. In: Shastri HS, editor. Astanga Hrdaya - A Compendium of The Ayurvedic System of Vagbhata with the Commentaries of Sarvangasundara of Arunadatta & Ayurvedarasyana of Hemadri. Varansi, India: Chaukhamba Surbharti Prakashan.2016: 459.
14. Madhavakara. Parishishtam, Saamaanya-sannipaata Jwara Bhedam. In: Tripathi B, editor. Madhava Nidanam of Shri Madhavakara with commentary on Madukosha by Vijayarakshita & Dutta SK; and Vidyotini by Sastri SS. Varanasi, India: Chaukhamba Surbharati Prakashan; 2022:4-6.
15. Madhavakara. Parishishtam, Saamaanya-sannipaata Jwara Bhedam, chapter 13-14. In: Tripathi B, editor. Madhava Nidanam of Shri Madhavakara with commentary on Madukosha by Vijayarakshita & Dutta SK; and Vidyotini by Sastri SS. Varanasi, India: Chaukhamba Surbharati Prakashan.2022.
16. Khabarcenter. Are you taking Tinospora cordifolia (Gurjo)? Give attention to advantage and disadvantage of its usage (English translation). <https://khabarcenter.com/content/1372021> [cited 2021 September 13].
17. Agnivesa. Chikitsa Sthana, Hikkaswaschikitsadyaya, chapter 26, verse 144. In: Sastri KN, editor. Charak Samhita of Agnivesh, Charak, Dridhabala with Vidhyotini hindi commentary. Part II. 2nd edition ed. Varanasi, India: Chaukhamba Bharti Academy; 1970.
18. Agnivesa. Chikitsa Sthana, Hikkaswas Chikitsadyaya chapter 17, verses 123-124. In: Sastri KN, editor. Charak Samhita of Agnivesa, Charak, Dridhabala with Vidhyotini hindi commentary. Part II. 2nd edition ed. Varanasi, India: Chaukhamba Bharti Academy; 1970.
19. Agnivesa. Chikitsa Sthana, Rasayanadyaya chapter 1, verse 63-69. In: Sastri KN, editor. Charak Samhita of Agnivesa, Charak, Dridhabala with Vidhyotini hindi commentary. Part II. 2nd edition ed. Varanasi, India: Chaukhamba Bharti Academy; 1970.
20. Thakar A, Panara K, Patel F, Bhagiya S, Goyal M, Bhinde S, et al. Add-on Ayurveda treatment for early stage COVID-19: a single center retrospective cohort study from Gujarat, India. Journal of Evidence-Based Integrative Medicine. 2021;26:2515690X211020685. DOI:10.1177/2515690X211020685 PMID:34057365 PMCID:PMC8170329
21. Gupta SM, Shivaprasad H, Kharya M, Rana A. Immunomodulatory activity of the ayurvedic formulation "Ashwagandha Churna". Pharmaceutical biology. 2006;44(4):263-5. DOI:10.1080/13880200600713949
22. Manjunatha S, Jaryal A, Bijlani R, Sachdeva U, Gupta S. Effect of Chyawanprash and vitamin C on glucose tolerance and lipoprotein profile. Indian journal of physiology and pharmacology. 2001;45(1):71-9.
23. Susruta. Sutrasthana, chapter 45; verse 39. In: Sharma A, editor. Sushruta Samhita of Susruta. Part II. Varanasi, India: Chaukhamba Surbharati Prakashan. 2013.
24. Agnivesa. Chikitsa Sthana, Trimarmiyeeadyaya, chapter 26, verse 139. In: Sastri KN, editor. Charak Samhita of Agnivesa, Charak, Dridhabala with Vidhyotini hindi commentary. Part II. 2nd edition ed. Varanasi, India: Chaukhamba Bharti Academy. 1970.
25. AYUSH. Ayush Ministry Releases fresh COVID-19 Guidelines New Delhi, India: Ministry of AYUSH, Government of India; 2021 [updated April 26, 2021; cited October 23, 2023]. Available from: <https://pib.gov.in/PressReleasePage.aspx?PRID=1714205>.
26. Patel BD, Shah B, Prasad SM, Bhatta P, Roka DB. Ayurveda Guidelines of Preventive Measures and Curative Management Protocol for COVID 19 in Nepal. 2021.
27. Misra B. Tulsi (Ocimum sanctum Linn., family; Lamiaceae); verse 63, Pushpa varga. In: Pandey GS, editor. Bhavaprakash Nighantu with Hindi commentary by Chunekar KC. Reprint ed. Varanasi, India: Chaukhambha Bharati Academy; 2015. 496-7.
28. Anonymous. Haridra (Curcuma Longa Linn., family; Zingiberaceae) Guduchyadi Varga verge 59. In: Ojha J, Mishra U, editors. Dhanwantari Nighantu. 6th ed. Varanasi, India: Chaukhamba Surbharati Prakashan; 2016.
29. Misra B. Haridra (Curcuma longa Linn., family; Zingiberaceae); verse 197, Haritakyadivarga. In: Pandeya GS, editor. Bhavaprakash Nighantu with Hindi commentary by Chunekar KC. Reprint ed. Varanasi, India: Chaukhambha Bharati Academy. 2015:12.
30. Agnivesa. Chikitsa Sthana, Jwarachikitsadyaya, chapter 3,

- verse 307. In: Sastri KN, editor. Charak Samhita of Agnivesa, Charak, Dridhabala with Vidhyotini hindi commentary. Part II. 2nd edition ed. Varanasi, India: Chaukhamba Bharti Academy. 1970.
31. Kaushik R. Trikatu-A combination of three bioavailability enhancers. *International Journal of Green Pharmacy (IJGP)*. 2018;12(03).
 32. Bhut S, Auropremi M, Changle S. A review article on tamaka shwasa wsr to childhood asthma. *World J Pharm Pharm Sci*. 2017;6:537-50.
DOI:10.20959/wjpps20178-9796
 33. Makhija IK, Ram HA, Shreedhara C, Kumar SV, Devkar R. In vitro antioxidant studies of sitopaladi churna, a polyherbal ayurvedic formulation. *Free Radicals and Antioxidants*. 2011;1(2):37-41.
DOI:10.5530/ax.2011.2.8
 34. Das G. Vasavaleha/Kantakaryavleha. In: Misra BS, editor. Bhaisajaya Ratnawali with commentary by Shastri AD. Volume I. 13th ed. Varanasi, India: Chaukhamba Sanskrit Bhawan; 2014:27.
 35. Kapil A, Sharma S. Immunopotentiating compounds from *Tinospora cordifolia*. *Journal of ethnopharmacology*. 1997;58(2):89-95.
DOI:10.1016/S0378-8741(97)00086-X
PMID:9406896
 36. Sharma R, Sharma A, Sharma R. A Comparative Antipyretic Efficacy of Aqueous Extract and Alcoholic Extract of Sanjeevani Vati in Textual Dose wsr to Jwar: An In-Vivo Study. *Journal of Ayurveda*. 2018;XII(1).
 37. Pawar VB, Shinde D, Pudale SD, Paliwal A. A Comparative Study of Anand Bhairav Rasa and Tribhuvana Kirti Rasa in the Management of Vata Kaphaja Jwara.
 38. Satyal J, Adhikari J. An Integrated Approach in COVID-19 Patient with High Oxygen Dependency Status. *Annapurna Journal of Health Sciences*. 2022;2(1):43-5.
DOI:10.52910/ajhs.62
 39. Anonymous. The of Gurjo and Turmeric increased rapidly, when after winning the corona virus Mahottari, Nepal: Hamrakura.com. [updated September 4, 2020; cited October 22, 2023]. Available from: <https://hamrakura.com/news-details/86216/religion>.
 40. Chandra H. Too much turmeric, methi, vitamin D-Doctors fight new emergencies driven by Covid fear New Delhi, India: The Print; 2020 [updated September 4, 2020; cited October 22, 2023]. Available from: <https://theprint.in/health/too-much-turmeric-methi-vitamin-d-doctors-fight-new-emergencies-driven-by-covid-fear/495557/>.
 41. Uyangoda NT, Gamagedara TP, Suraweera RK, Nawarathna LS. Investigation of the Use of Medicinal Plants and Natural Products for COVID-19 Prevention and Respiratory Symptoms Treatment during the COVID-19 Pandemic in Sri Lanka. *Sri Lankan Journal of Health Sciences*. 2022;1(2).
DOI:10.4038/sljhs.v1i2.48
 42. Kotecha R. The journey with COVID-19: Initiatives by Ministry of AYUSH. *Journal of Ayurveda and Integrative Medicine*. 2021;12(1):1.
DOI:10.1016/j.jaim.2021.03.009
PMID:33812534 PMCID:PMC8011587
 43. Slamp D, Yoga, New York, USA: Yoga Journal.2021 [updated May 5, 2021; cited September 12, 2023]. Available from: <https://www.yogajournal.com/practice/10-yoga-poses-to-boost-your-immunity/>.
 44. Anonymous. What is Pranayama? New York, USA: Yoga Journal; 2022 [updated Apr 26, 2023; cited October 23, 2023]. Available from: <https://www.yogajournal.com/practice/beginners/how-to/pranayama>.
 45. Turner L. 6 Ways Meditation Supercharges Your Immunity New York, USA: Yoga Journal.[updated Apr 16, 2021; cited Sep 12, 2023]. Available from: <https://www.yogajournal.com/meditation/benefits-of-meditation/6-ways-meditation-supercharges-your-immunity/>.
 46. AYUSH. Guidelines for Naturopathy Practioners for COVID 19. New Delhi, India: Ministry of AYUSH, Government of India; 2020.
 47. AYUSH. Guidelines for Yoga Practioners for COVID 19. New Delhi, India: Ministry of AYUSH, Government of India. 2020.
 48. Kim SW, Su KP. Using psychoneuroimmunity against COVID-19. *Brain, behavior, and immunity*. 2020;87:4-5.
DOI:10.1016/j.bbi.2020.03.025
PMID:32234338 PMCID:PMC7194899
 49. Maheshkumar K, Venugopal V, Poonguzhali S, Mangaiarkarasi N, Venkateswaran S, Manavalan N. Trends in the use of Yoga and Naturopathy based lifestyle clinics for the management of Non-communicable diseases (NCDs) in Tamilnadu, South India. *Clinical Epidemiology and Global Health*. 2020;8(2):647-51.
DOI:10.1016/j.cegh.2019.09.013
 50. Fleming SA, Gutknecht NC. Naturopathy and the primary care practice. *Primary Care: Clinics in Office Practice*. 2010;37(1):119-36.
DOI:10.1016/j.pop.2009.09.002
PMID:20189002 PMCID:PMC2883816
 51. Koithan M, Sutherland E. Naturopathic treatment of obesity. *The Journal for Nurse Practitioners*. 2009;5(9):693-4.

DOI:10.1016/j.nurpra.2009.07.019

PMID:20161459 PMCID:PMC2791327

52. Adam O, Beringer C, Kless T, Lemmen C, Adam A, Wiseman M, et al. Anti-inflammatory effects of a low arachidonic acid diet and fish oil in patients with rheumatoid arthritis. *Rheumatology international*. 2003;23:27-36.
DOI:10.1007/s00296-002-0234-7
PMID:12548439
53. Dua R, Malik S, Kumari R, Naithani M, Panda PK, Saroha A, et al. The Role of Yoga in Hospitalized COVID-19 Patients: An Exploratory Randomized Controlled Trial. *Cureus*. 2023;15(5).
DOI:10.7759/cureus.39320
54. Miller AH, Raison CL. The role of inflammation in depression: from evolutionary imperative to modern treatment target. *Nature reviews immunology*. 2016;16(1):22-34.
DOI:10.1038/nri.2015.5
PMID:26711676 PMCID:PMC5542678
55. DOAA. Ayurveda and Alternative Medicine Guidelines of Preventive Measures and Curative Management Protocol for COVID 19 in Nepal. Kathmandu, Nepal: Department of Ayurveda and Alternative Medicine, Ministry of Health and Population.2021:21.
56. AYUSH. Guidelines for Homoeopathic Practitioners for COVID 19. New Delhi: Ministry of AYUSH, Government of India; 2020.
57. Tripathy T. Homoeopathy in COVID 19-A Treatment Protocol for Second and Third Wave. *Sch Int J Tradit Complement Med*. 2021;4(6):86-90.
58. AYUSH. Guidelines for Unani Practitioners for COVID 19. Ministry of AYUSH, Government of India. 2020.
59. Kishore J, Kumar R, Nazli T, Ahmad A, Kumar P, Khan AA. Efficacy of the Unani Regimen as an Add-On to Standard Treatment in Hospitalised RT-PCR-Confirmed Mild to Moderate COVID-19 Patients: An Open-Label Randomized Controlled Trial. *Cureus*. 2023;15(5):e38574.
DOI:10.7759/cureus.38574
60. AYUSH. Guidelines for Siddha Practitioners for COVID 19. New Delhi, India: Ministry of AYUSH, Government of India 2020.
61. NHC. Guideline for the Diagnosis and Treatment of COVID-19. Trial 8th edition ed. China: National Health Commission of the People's Republic of China, 2020.
62. Xiong Y, Gao M, van Duijn B, Choi H, van Horssen F, Wang M. International policies and challenges on the legalization of traditional medicine/herbal medicines in the fight against COVID-19. *Pharmacological research*. 2021;166:105472.
DOI:10.1016/j.phrs.2021.105472
PMID:33592272 PMCID:PMC7882224
63. AKM. COVID-19 Korean medicine clinical guidance. 2nd edition. The Association of Korean Medicine./ Korean Medicine Convergence Research Information Center. [cited on Sep 19, 2023]. Available from <https://www.kmcric.com/news/newspaper/view/41842>.
64. Lee BJ, Lee JA, Kim KI, Choi JY, Jung HJ. A consensus guideline of herbal medicine for coronavirus disease 2019. *Integrative Medicine Research*. 2020;9(3):100470.
DOI:10.1016/j.imr.2020.100470
PMID:32691002 PMCID:PMC7335489
65. Zhang H, Penninger JM, Li Y, Zhong N, Slutsky AS. Angiotensin-converting enzyme 2 (ACE2) as a SARS-CoV-2 receptor: molecular mechanisms and potential therapeutic target. *Intensive care medicine*. 2020;46:586-90.
DOI:10.1007/s00134-020-05985-9
PMID:32125455 PMCID:PMC7079879
66. Heidary F, Varnaseri M, Gharebaghi R. The potential use of persian herbal medicines against COVID-19 through angiotensin-converting enzyme 2. *Archives of clinical infectious diseases*. 2020;15.
DOI:10.5812/archcid.102838
67. Chaturvedi S, Kumar N, Tillu G, Deshpande S, Patwardhan B. AYUSH, modern medicine and the Covid-19 pandemic. *Indian J Med Ethics*. 2020;5(03):191-5.
DOI:10.20529/IJME.2020.058
PMID:32546457
68. Golechha M. Time to realise the true potential of Ayurveda against COVID-19. *Brain, behavior, and immunity*. 2020;87:130.
DOI:10.1016/j.bbi.2020.05.003
PMID:32389701 PMCID:PMC7204691
69. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian journal of psychiatry*. 2020;52:102066.
DOI:10.1016/j.ajp.2020.102066
PMID:32302935 PMCID:PMC7151415
70. Rajkumar RP. Ayurveda and COVID-19: where psychoneuroimmunology and the meaning response meet. *Brain, behavior, and immunity*. 2020;87:89.
DOI:10.1016/j.bbi.2020.04.056
PMID:32334064 PMCID:PMC7175849
71. Gupta PK, Sonewane K, Rajan M, Patil NJ, Agrawal T, Banerjee ER, et al. Scientific rationale of Indian AYUSH ministry advisory for COVID-19 prevention, prophylaxis, and immunomodulation. *Advances in Traditional Medicine*. 2023;23(2):321-45.

DOI:[10.1007/s13596-021-00574-7](https://doi.org/10.1007/s13596-021-00574-7)

PMCID:PMC8082487

72. Kim DS, Chu H, Min BK, Moon Y, Park S, Kim K, et al. Telemedicine Center of Korean Medicine for treating patients with COVID-19: a retrospective analysis. Integrative medicine research. 2020;9(3):100492.
DOI:[10.1016/j.imr.2020.100492](https://doi.org/10.1016/j.imr.2020.100492)
PMID:32802745 PMCID:PMC7395239
73. Zhao J. Investigating mechanism of Qing-Fei-Pai-Du-Tang for treatment of COVID-19 by network pharmacology. Chinese Traditional and Herbal Drugs. 2020:829-35.
74. Gundeti MS, Bhurke LW, Mundada PS, Murudkar S, Surve A, Sharma R, et al. AYUSH64, a polyherbal Ayurvedic formulation in Influenza-like illness-Results of a pilot study. Journal of Ayurveda and integrative medicine. 2022;13(1):100325.
DOI:[10.1016/j.iaim.2020.05.010](https://doi.org/10.1016/j.iaim.2020.05.010)

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