

YAGYA A HOLISTIC APPROCH FOR TREATING COVID-19 CONDITIONS– A CLASSICAL REVIEW

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ABSTRACT

Coronavirus disease 2019 (COVID-19) pandemic caused by SARS-CoV-2 has emerged as a global public health threat. Though the fear, Anxiety, and stress related to COVID-19 have been studied in depth, the direct effects of SARS-CoV-2 on the central nervous system (CNS) remain elusive. Research related to the earlier coronavirus (CoV) outbreaks (like Severe Acute Respiratory Syndrome, SARS and Middle East Respiratory Syndrome, MERS) shows the neurotropic nature of CoV and the plethora of neuropsychiatric effects that it can cause. Though the current health priorities in managing COVID-19 remain restricted to containment and targeting pulmonary symptoms, but with this it is also necessary to maintain the mental health of the peoples because spread of covid -19 has disturbed the mental state of all the peoples, they have a fear, stress and anxiety peoples are seem to

be emotionally depressed, all these factors are Going to worsen the quality of life. Emerging evidence shows neural spread of the novel corona virus. Delirium, encephalopathy, olfactory disturbances, acute behavioral changes, headache and cerebrovascular accidents are its common neuropsychiatric complications. For fighting against Covid -19 now the peoples are believing that the some spiritual acts also help in controlling the fear of this pendemic condition and among them the best one is Yagya because Yagya is a holistic approach to control the conditions of this fearful pendemic covid -19, Yagya makes peoples psychologically, physically and socially healthy and with the health its also clean the environment by killing the airborne bacterias and viruses because particles of its fume work at nano level. Yagya is our ancient pathy and now it seems that whole world is moving towards

it, the whole world is fighting against this pandemic condition of covid-19, if we go through the literature of ancient Indian medicine, the indication of yagya is found their for the pandemic conditions in all the Vedas, samhitas and puranas, acharya Charak has indicate in charak samhita janpadodhwansh (pandemic) adhyaya to perform yagya for the peace of mind and cleaning of environment in pandemic conditions because in pandemic conditions peoples get mentally disturbed due to fear, stress, and anxiety and in that condition the effect of rhythmic sound of mantras and inhalation of medicated fume create a feeling of peace and happiness in them and environment also get fresh and calm. Hence in modern era when life is going to be worsen physically and mentally the yagya therapy can provide a lot of holistic health benefits to the whole world. *Yagya* as a therapy for psychological ailments provides pulmonary inhalation of medicinal-smoke of multiple herbs (generated through oblation in fire along with chanting of Vedic hymns), which have the potential for therapeutic results as well as to purify the environment and mke it free from disease causing agents. *Yagya* mentioned in Ayurveda and Veda as '*Devvyapashraya Chikitsa*' (Divine or Mantra therapy) and '*Bhaishjya Yagya*' (treatment of ailments by doing *Yagya* with medicinal herbs) has multidimensional benefits on physical, mental, social and spiritual health. This article will help in the establishment of *Yagya* Therapy as an important therapeutic approach, and will pave the way for controlling the pandemic conditions like covid-19. A study, presenting the ancient subject matter in a simple manner for the scientific world is needed and that is why this effort has been made to pave the way for future studies. This study aims to compile the ancient literary information dispersed in various Vedas, *Ayurvedic Samhitas*, our ancient literature and at the same time to collect the information available in the modern medical science related to the *Yagya* and *Manas Rogas and pandemic conditions like covid-19* etc, and interpreting both sides to get an overview and discern the various aspects of the subject.

INTRODUCTION

In physical terms *Yagya* is a process aimed at the refinement of the subtle energy existing in matter with the help of thermal energy of the mantras. The knowledge of philosophy and science of *yagya* is as essential for understanding and Experimenting the science of spirituality as the knowledge of elementary physics is for material based sciences. (Joshi, Rajni R 2011).^[1] According to *Shabdaratnavali*, *Ishti*, *Homa*, *Havanam* are the synonyms of *Yagya*. *Yagya* is a spiritual experiment of sacrificing and sublimating the *havan samagri* in the *Yagya Agni* with chanting of *Vedic Mantras*. This is only the physical process or ritual of *Yagya*, which has scientific importance and beneficial effects. This *agni-Yagya* when

performed at small scale is also known as *Havan*, *Homam* or *Agnihotra*. However, the meaning of *Yagya* is not confined to this sacrificial fire-process. It has much wider and deeper meanings. Linguistically, the word *Yagya* is derived from the Sanskrit verb *Yaj*, which means –devapoojan (worshiping divinity), *sangatikaraña* (harmonious association) and *dana* (charity). *Yagya* is an absolute faculty discovered by the *rishis* that bestows distinct materialistic and spiritual bequests. It also generates the unique flow of motivation towards higher ideals and noble goals of human life. Its glorious place in the divine Indian Culture is derived from the preeminent teachings of virtuous and altruist life indwelling in the philosophy of *Yagya*.

Yagya has multiple applications described in *Vedic* and *Ayurveda* literature. For instance, *Yagya* has been used in solving the problems related to environment, in managing natural disasters, for achieving spiritual progress, for maintaining ecological balance, for managing social balance and for preventing and curing various physical and psychological diseases.

Since Vedic era application of *Yagya* for environment purification and health benefit is one of the important utility of *Yagya*. *Vedas* described development of mental faculties such as mind, speech and intellect through *Yagya*. *Yajurveda* described psycho-physiological benefit including Praan(vitality), Chitta(subconsciousness), Vani(speech), Mana(Mind) etc. through *Yagya*. *Rigveda* mentioned general health benefits through divine *Yagya* fire obligations of various herbs to be strengthened and nurtured. *Atharveveda* also elaborated *Yagya* for long healthy life and cure of disease. The philosophy of *Yagya* bears an art of living with harmony to promote and protect higher human values in the society which is actually forms the basis of the health and happiness in an ideal human culture.

Ayurvedic compendia also refer *Yagya* as a therapeutic tool for the individual health as well as environmental hazards. *Dhoomapana* (fumigation), the concept of burning herbs in the fire to generate medicinal-smoke and taking it through breath by performing *pranayama* prevails in the *Ayurvedic* literature. In *Ayurveda* specially in *Charak samhita*, *Susruta samhita* and other *Samhitas*, *Yajna* is indicated by the *Acharyas* in various *Manas rogas* (psychological disorders) *Kama* (longing/ lust), *Krodha* (anger/wrath), *Lobh*(greed), *Moha* (dilusion/ distraction), *Shoka* (anguish /affliction), *Aapasmaar* (epilepsy) ,*Unmaad* (insane/extravagent) are basically caused by imbalance in *mansik doshas*. Along with other approaches, ‘Homa’ has been mentioned as an instrument under Dev Vyapashrya chikitsa.

मन्त्रौषधिमणिमंगलबल्युपहारहोमनियमप्रायश्चित्तोपवासस्वस्तयनप्रणिपातगमनादि ।। (च.वि.८/८७)

According to *Ayurveda samhitas* psychological disorder is caused by non-fulfillment of desires and facing of undesired.

मानस : पुनरिष्टस्यालाभाल्लाभाच्चानिष्टस्योपजायते । (च.सं.सू.११/४५).

Ayurveda is an integrative body mind spirit system of life and health care. This integrative approach is proving more and more relevant to the present day health needs of the people world over. Health is a state of balance of *Sharirik doshas* and *Mansik doshas*. *Vaisamya* in *doshas* operates through *Ayoga- Atiyoga- Mithyayoga* of *Kala, Buddhi Indriyarth*. Classically known as *Kala, Parinaam, Pragna apraadh*, and *Asaatmendriyarth Samyoga* respectively. These three categories of erroneous informational inputs lead to an unwholesome state which if over rides a limit results into stress disorder both mental and physical.

कालबुद्धिन्द्रियार्थानां योगो मिथ्या न चाति च ।

द्वयाश्रयाणां व्याधीनां त्रिविधो हेतु संग्रहः ।।

(च.सं.सू.१/५४)

Description of Yagya in Vedic literature

Yagya in *Vedic* scripture as well as in *Ayurvedic* texts has been described as a treatment of various somatic and psychological ailment as well as various environmental problems. A survey of the ancient literature traces the concept of *Yagya and It's role in various ailments and environmental purification* as back as the *Vedic* age. The *Vedas* are collection of hymns and prayers on long and healthy life span. It has been the cherished wish of human race to achieve long life and to live at least 100 years in perfect health. Although a systematic description is unavailable still existence of similar thoughts in *Vedic* literature are encountered. The description available in different periods is similar with emphasis on achievement of long and healthy life. Its utility in different traditions and parts of India is still observed carrying remnants of *Vedic* traditions. Specific *Hawan-samagri* (herbs), specific-*Samidhas* (wood materials), Cow's *Ghrit* (clarified butter), specific-rituals including specified mantras, shapes-sizes of *Kunds*, and specific time of the *Yagya* performance, etc., varies according to disease types and patients' conditions. Vedic references indicate that

Yagya Therapy was very advanced at that stage, however, in due course, the fine details of these protocols and applications were lost. The concept of burning herbs in the fire to generate medicinal-smoke and taking it through breath by performing *pranayama* prevails in the *Vedic* literature is similar to the concept of *Dhoompaan* in *Ayurveda*. Even in modern time, application of *Bheshaj Yagya* is commonly seen in Indian culture. Based on this concept, *Yagya* was defined for the present study as an ancient Indian therapeutic procedure of herbal pulmonary inhalation allowing administration of medicinal-smoke of specific herbs generated through sacrifice in specific-fire-environment for health benefits knowingly or unknowingly. (Raghuvanshi M, Pandya P, Joshi RR. 2004).^[2]

Vedas also mention the mechanism of *Yajna* Therapy. Rigveda describes two ways for the transportation of the *Yajna vayu* (*Yajna* medicinal-smoke) in the human body. The inhaled medicinal-smoke is supposed to give immunity and strength, while exhaled breath provides removal of toxins out of the body. In addition, Rigveda also describes that the breathing of *Yagya Vayu* generated by the oblation of herbs in the fire is supposed to provide peace and happiness. It is further stated that the *Yagya vayu* contains properties like nectar and provide longevity (Sharma S, Sharma B devesh, 2013).^[3]

By performing *Yagya* man gets freedom from physical and mental disorders. The environment also become free from disease causing agents. Peaceful environment calms the mind and various psychological disorders.

अग्नेहंसिन्यत्रिणंदीद्यन्मतर्येषा । स्वेक्षयेदुचिब्रत ॥ (ऋग्वेद १०.११८.१)

That is Holy Sacrificial fire illuminated in the middle of human being destroy the disease causing agent and anger etc.

प्राणयास्वाहापनायास्वाहाव्यानायास्वाहाचक्षुषेस्वाहा । श्रोत्रायास्वाहावाचेस्वाहामनसेस्वाहा ॥ (यजुर्वेद. २२.२)

Yagya has also been claimed to regulate the factors which play vital roles in living body functions.

The sound waves produced by the chanting of hymn and aroma of the medicines put in the sacrificial fire of the *Yagya* control the deformed brain of man and free him from insanity and other various mental disorders.

इममेअग्रेपुरुषंमुमुग्ध्यंयोबद्धःसुयतोलापपीति ।अतोऽधितेकृण्वद्वागधेयंयदाऽनुन्मदितोऽसति ।। (अथर्व.६.१११.१)

Prayer is being made here in this verse before Agni to cure a man who is babbling and talking irrelevantly.

यदिक्षितायुर्यदिवापरेतोयदिमृत्योरान्तिकं नीत एव ।

तमाहरामिनिर्ऋतेरुपस्थादस्पर्शमेनंशतशारदाय ।। (अथर्व.३.१.२.)

There are references in the *Vedas* that a person who has reached near the death, *Yagya* even then bring him back to life.

Mental disorders also cause various physical disorders, therefore if mental anguish is eradicated a person get free from various mental disorders and live healthy life. This can be achieved by inhalation of fumes of *Yagya* and by the effect of waves produced by chanting of mantras as mentioned in the following verse:

अङ्गेअङ्गेशोचिषाशिश्रियाणंनमस्यन्तस्तवाहविषाविधेम ।

अङ्कान्त्समङ्काकान्हविषाविधेमयोअग्रभीतपर्वास्याग्रभीता ।। (अथर्व. १.१२.२)

In *Atharvaveda* it is mentioned that the fume produced from sacrificial fire of *Yagya* and the sound waves generated by the chanting of *mantras* are capable to destroy the various agents which generate physical and mental disorders and create environmental threats.

इदंहविर्यातुधानाननदीफेनमिवावहत् । यइदंस्त्रीपुमानकरिहसस्तुवतांजनः ।। (अथर्व. १.८.६)

The *Havi* (oblations) poured in the sacrificial fire drains the disease causing agents out of the body as river water expels to the froth. *Yagya Agni* also kills the disease causing agents which are hidden in secret places of human body and environment and also destroy the hundreds of disease.

In *Narsimha Purana* it is mentioned that

आरभेयुश्च ते यत्रात ततो होममतंद्रिता..... सर्व बाधा प्रशमनी शांतिर्भवति सर्वदा ।।

(नर.सि.पु.१५.....२३)

Offerings should begin with all attentive state of mind, such performance of offering renders peace and shatters the hurdles and pains from the village, town, district and nation as whole.

In sixth *Tarang* of *Raavan Samhita* it is said that for treatment of all physical and psychological disorder Hawan should be done with chanting of *Mahamrityunjaya Mantra* as given in following verses:

मृत्युंजयहवनं खलु सर्वरूजां शान्तये विधेयं स्यात्। सर्वेष्वपि होमेषु ब्राह्मणभुक्तिस्तथा तथाप्तवचः।
(रावण संहिता)

Importance of *Yajna* is given to cure the all types of disorders in first instance. As given in

यया प्रयुक्तया चेष्टया राजयक्ष्मा पुरा जितः। तां वेदविहितामिष्टिमारोग्यार्थी प्रयोजयेत्॥ (च.चि. ८/१८६)

The patient desire of regaining his health should perform the same religious rites enjoined by the *Vedas* as those by the performance of which *Rajyakshma* (tuberculosis) was subdued in the first instance.

In the third chapter of charak samhita *vimaan sthana*, entitled as *Janpadodhvanshneyam* (Epidemics) *Yajna* is advised to perform to create peace, happiness, hygienic and healthy environment in epidemics which is necessary to maintain the physical and psychological health of peoples.

आदिकालेह्यदितिसुतसमौजसोऽतिविमलविपुलप्रभावः प्रत्यक्षदेवदेवर्षियज्ञविधिविधानाः

शैलसारसंहतस्थिरशरीराःअतः प्राणिनो ह्यासमवायुपुरायुषः क्रमश इति॥

(च.वि.३.२४)

In *Vimaan sthaan* of charak samhita *Yajna* is mentioned under *Devvyapasraya chikitsa* to cure all psychological and physical disorders.

मन्त्रौषधिमणिमंगलबल्युपहारहोमनियमप्रायश्चित्तोपवासस्वस्तयनप्रणिपातगमनादि॥ (च.वि.८/८७)

The ancient Indian thought emphasized the theory of unity of body and soul and also explained how to deal with physical health, mental health problems and Environmental problems like pendemics (Sharma S. 2006).^[4] A concern with mental health and surrounding

environment has long been a part of Indian culture, which has evolved in a variety of ways, attempting to understand and negotiate psychological disorder (Mills J.2001).^[6]

In ancient literature of *Vedas* and *Ayurveda* it is found yagya play an important role in management of psychological disorders and environmental hazards and various recent scientific studies have done on its mechanism and the most important part of its various components of *Hawan samagri* used for treatment of psychological disorders and purification of environment.

Vedic references indicated that *Yagya* was very advanced at that stage, however, in due course, the fine details of these protocols and applications were lost (Sharma S 1994).^[6] The concept of burning herbs in the fire to generate medicinal-smoke and taking it through breath by performing pranayama prevails in the *Vedic* literature is similar to the concept of Intra Nasal Drug Delivery System (INDDS) in modern medicine. *Yagya* was defined for the present study as an ancient Indian therapeutic procedure of herbal pulmonary inhalation allowing administration of medicinal-smoke of specific herbs generated through sacrifice in specific-fire-environment (Raghuvanshi M, Pandya P, Joshi RR.2004),^[7] for health benefits knowingly or unknowingly.

The scientific studies conducted on various components of *Yagya* clearly demonstrate that *Yagya* was designed for multifaceted action to clean the environment as well as to cleanse the body of the toxins responsible for causing diseases related to brain (Turker et al. 2004).^[8] *Yagya* fumes are not only used for the disinfection of air, but also it can be environmentally oppressed for the physical, mental, intellectual and spiritual development based on nanotechnology of *Yagya*(Tripathi 2010),^[9] and Turker et al. 2004).^[10]

Recent Studies on the Effect of *Yagya* on Health and Environmental Purification

A study on the role of *Hawan* in Epilepsy was done in 2015 By R.P Kaur, Parveen Bansal, R Kaur, V Gupta and S Kumar (UCER, Baba Farid University of health sciences, Faridkot, India) .From the metadata analysis authors found that *Hawan* has been designed by the ancient scholars to fight with a plethora of diseases related to brain, more than 70% of the components of *Hawan samagri* are having a number of volatile oils that volatilize due to high temperature of fire. Most of the components have been found to be having anticonvulsant activity through one or the other mechanism. The action of maximum number of herbs is benzodiazepines, Phenobarbital, valproate like action that enhances GABA-ergic inhibition.

It is quite likely that the other volatile components those have not been explored for anticonvulsant action could add to further therapeutic antiepileptic action. The components of *Hawan* seem to have a multiple action in preventing epilepsy through scavenging of free radicals, increase in level of antioxidants, decrease in level of nitric oxide and other underlying mechanisms. From the pharmacological potentials of the components it can be concluded that the routine of performing *Hawan* might keep the threshold value of the antiepileptic elements in the body and help in preventing epilepsy however concerted efforts are required to prove the hypothesis.

The hypothesis behind action of *Hawan* on epilepsy is integration of modern and ancient concepts. As per modern science, it is a known fact that nasal drug delivery systems are the best drug delivery systems for the diseases related to brain. The specific energy currents reduced by *yagyagni* and *mantra shakti* have significant remedial effect on the disorders and diseases ranging from headache, migraine, cold to mental dullness, intellectual deficiencies, depression, insomnia, intemperance, epilepsy, schizophrenia and varieties of manias.

Another study was done on *Hawan* Designed to Fight Anxiety, published in Journal of Religion and Health January 2017 by Arvind sharma, Vikas Gupta, Sathi Kumar (UCER, Baba Farid University of health sciences, Faridkot, India. After doing complete study authors conclude that it is quite possible that property for binding CB2 receptors showed antianxiety effects. Furthermore, the rest of components have the other therapeutic actions. The component of *Hawan* seems to have a multiple action in preventing anxiety through scavenging of free radicals, increasing in level of antioxidants and other underlying mechanisms. From the pharmacological potentials of the components to recapitulate, it can be concluded that the routine of performing *Hawan* provides a satisfactory therapeutic value to fight with psychiatric diseases and help in preventing anxiety. Due to high temperature of fire, the vapors of these oils from herbs enter into the central nervous system through nasal route. As per modern science and ancient texts on medicine, nasal drug delivery systems are the best for the diseases related to brain and head. The routine of performing *Hawan* might keep the threshold value of the therapeutic components in the body and help in preventing anxiety.

Another study was done in **2016 Agnihotra Yajna: A Prototype of South Asian Traditional Medical Knowledge published in journal of Acupuncture and Meridian Studies BY Rahul ravindra nayr**. This study conceptualizes the principle of agnihotra yajna, effect of Medicinal smoke on brain which release in agnihotra. The perusal of ancient

and modern literature reveals that the functioning of the human body is impossible without maintaining an energetic continuum driven by sunlight. The seven major chakras existing over the spinal cord help to maintain this energetic continuum. Agnihotra yajna is proposed to balance the chakra system as a whole by minimizing entropy. Our brain cells communicate with one another by utilizing electric charges. This electrical activity in the brain is generally known as the brainwave pattern. The human brain exhibits different kinds of brain waves: delta waves (0.5–3 Hz), theta waves (3–8 Hz), slow alpha waves (8–12 Hz), fast alpha waves (12–15 Hz), beta waves (15–25 Hz), and gamma waves (38–42 Hz). These waves represent the ladder of consciousness. In the brain of a spiritually-enlightened person, gamma waves will be abundant; however, if a person has no deep consciousness, the gamma waves will not be present. The gamma waves have the highest frequency (highest energy) among brain waves.

A recent study found that the subtilization of matter into energy occurred during the performance of agnihotra yajna in the form of transformations of specific ingredients from a solid state to either a vapor phase or a colloidal phase, and as a result, electromagnetic waves were generated. These electromagnetic waves, together with the chanting of specific Vedic hymns (unique sonic signals), have potential health benefits, medicinal smoke, the routine practice of agnihotra yajna maintains the threshold values of potential therapeutic compounds in the human body, which, in turn, enhances the immunity to a great extent. For instance, the *Cocos nucifera* and the *Sesamum indicum* used in the present study were reported to be potentially useful in scavenging free radicals, thus preventing the pathogenesis of diseases. Moreover, the increased levels of antioxidants in the fumes reach the brain and then the nerves, thus alleviating psychological depression. Also, the distinct energy currents emerging from all Vedic fire rituals have been reported to possess curative actions for diseases, such as headaches, migraines, mental dullness, intellectual deficiencies, depression, insomnia, intemperance, epilepsy, schizophrenia, and varieties of manias. In conclusion, the ultimate purpose of practicing agnihotra yajna is to realize “LIFE”, which means “letting incessant flow of energy” through our body–mind system as any blockage in this flow would cause disharmony and chaos in the system, thus leading to poor health.

A study was done by **Dr. Selvamurti (Scientist-E, Defence Institute of Physiology and allied Sciences, Delhi)** presented in Yoga Conference held at IIT Delhi on 4th November, 1989. Paper titled neurophysiological effects of Mantras on mind and body from Agnihotra

which is performed at the time of sunset. In this experimental study, 8 healthy men were selected, They use to report at 4 p.m. for two days. First day for control recording, some irrelevant syllables were uttered at specific time periods. Next day evening the Agnihotra used to be performed with proper Mantras. Recording of physiological parameters viz. Heart rate, ECG, EEG, GSR, blood pressure were made on both days.

The results shows that, Ultration in the brain waves, while the mind (brain waves) remained unaltered before Agnihotra, meaningful elevation occurred after the reciting Agnihotra.

G.S.R. remained significantly higher due to proper Agnihotra.

A study was done in june 2017 **The inter-dependence between beliefs and feelings about a yagna: a correlational study published in Indian Journal of Traditional Knowledge – at Patanjali Research Foundation, Patanjali Yogpeeth, Haridwar, Uttarakhand, By – A.K Bhardwaj, Deepshikha Tyagi, Shirley Telles, nilkamal singh and Acharya Balkrishna.** This correlational study intended to correlate beliefs that a yagna does have beneficial effects with calmness, compassion, and warmth towards other people, in this study two questionnaires were intended to quantify the participants' beliefs about yagna as well as their subjective feelings immediately after the yagna, the beliefs were choosen after carrying out an informal interview of approximately 50 participants who had attended somyagna. After data analysis researcher reach to a result that somyagna purifies the environment was positively correlated with: a feeling of calmness and warmth towards other after the yagna and they found that somyagna positively influences the mental health. Somayagna appear to induce feelings of physical and mental relaxation in participants attending it.

A study was held in Yagyashala of Dev Sanskriti Vishvavidyalaya Shantikunj Haridwar in 2018 to see the effect of gayatri mantra fire oblations during Yajna on GSR(Galvanic Skin Response), In this researcher measured GSR pattern in 12 participants during Yajna ritualand evaluated changes in GSR signals during chanting of Gayatri Mantra in Yajna. The result indicated GSR signals follow a defined pattern during Yajna median GSR signals were decrease after yajna i.e later half of the Yajna (median fold changes decrease 1.38;n= 12;p=0.0010) this decrease in GSR was achieved during oblations to fire with Gayatri mantra (median fold changes decrease 1.35; n= 12; p=0.0024)and remained low compared to that of in starting phase of Yajna. Over all the study indicated the tremendous potential of vedic traditional ritual of Yajna. Yajna making a positive effect in terms of relaxation in emotional state.(K.Vishwas, P.Hemant (2018)).^[91]

Effect of Yagya on Environment

An article published in Science Direct, Ethnopharmacology states that “**Medicinal smoke reduces airborne bacteria.**” A study carried out by a team of scientists Nautiyal CS¹, Chauhan PS, Nene YL. at National Botanical Research Institute (NBRI) in India, 2007 Dec 3;114(3):446-51. Epub 2007 Aug 28, has claimed that smoke emitted during havans reduces airborne bacteria to a large extent, minimizing possibility of infectious diseases. Various gasses produced during Havana decompose the poisonous gasses liberating free oxygen and other useful products acting like disinfectants. Performance of daily Yajna or Havan has many benefits. This is an activity with multiple benefits. We not only purify the air but also remove the impurities of our mind and body. Inhaling the fumes of havan which contains herbal materials, from distance induces secretions from certain glands related to wind pipe that fills our mind and heart with relaxation. It is similar to use of essential oils or herbal oils effect. Through this study they show that yajna is beneficial for environment and human health.

Mode of Action of Yagya

Yagya work through two ways: 1. *Dhoompaan* (Inhalation of medicinal fumes) 2. Recitation of *Mantras*. Herbal medicines which are offered in sacrificial fire of *Yagya* enter in the human body in gaseous form through nose and first reach to brain followed by lungs and other subtle components of the body and chanting of mantras and along with the fumes electromagnetic waves and radiations generated from pyramidal shaped copper pot during *Yagya* may effect on rhythms of body and brain these vibrations stimulate the neurotransmitters or neuromodulators required to enhance the tranquility of mind and hence control several psychological disorders.

On the basis of analysis of available data on pharmacological actions and therapeutic actions of components of *Yagya* it seems that *Yagya* was designed by our ancestor's physicians to keep away from psychological disorders. It may be concluded that herbal components burn and vibrations produce by chanting of mantras in *Yagya* have potential to overcome the psychological disorders, and purification of environment without any side effect and it will be a holistic approach towards positive and healthy life style in the present Global scenario.

However, for its proper utilization and awareness for mass applications, it is necessary to find the original references from *Vedic* and *Ayurvedic* texts regarding *Yagya* as a therapeutic application. This will not only strengthen its conceptual understanding in the society, but will

also make the basis for further research. The present study attempted to shed light on *Yagya* Therapy for various diseases, and pandemic conditions by reviewing descriptions from *Vedic*, *Ayurvedic* and their supporting literature. This study will be a footstep in the efforts to establish the probable mode of action of *Yagya* to improve/cure the psychological and physical disorders as well as purification of environment.

Therapeutic Components of Yagya

Therapeutic components of Yajna are

1. Fire and Fumes.
2. Sound.

The duration of *Yagya*, selection of mantras and the type of herbal medicinal plant preparation to be used in it depend upon the nature and extent of the disease. In order to get an idea of the various chemical changes which take place, it is essential to know the various Fumigating Substances offered in *Yagay* as *Hawan saamagri*.

(A) Wood

Wood has to be dry and free from dust, insects and worms. The wood is cut into small sticks of varying lengths called *Samidhas* according to the size of the altar or *Agnikunda*. The principal types of wood used are the following:

- I. Sandal-wood (*Santalum Album*).
- II. Agar and Tagar wood (*Aquilana Malaccensis* and *Valeriana Wallchii*).
- III. Deodar (*Cedrys Libani*).
- IV. Mango (*Mangifera Indica*).
- V. Dhak or Palash (*Butea Frondosa*).
- VI. Bilva (*Aegle Marmelos*).
- VII. Pipal (*Ficus Religiosa*).
- VIII. Bargad (*Ficus Bengalensis*).
- IX. Shami (*Proposis Spicigera*).
- X. Gular (*Ficus Glomerata*).

Saw dust of sandal-wood and pine wood, the agar and tagar wood chips, *kapurkachari*, *guggal*, *nagarmotha*, *balchhaar* or *jatamansi*, *narkachura*, *sugandhbala*, *illayachi*, *jayphal*, *cloves* and *dalchini*.

(B) Odoriferous Substances

These are --- saffron, musk, agar, tagar, *chandan*, *illaychi*, *jayphal*, *javitri* and camphor.

(C) Substances with Healthy Constituents

These are clarified butter (*ghee*), milk, fruits and cereals like wheat, rice, barley, *til*, *kangu*, *munga*, *chana*, *arhar*, *masur* or *peas*.

(D) Sweet Substances

These usually are --- sugar, dried grapes, honey or *chhuhara*.

Process of combustion and production of fumes

The scientific process of *Yagya* makes maximum use of the marvelous effect of sublimization and sublimation in the carefully designed (for controlled gradual temperature variation) *Yagya-kundaas*. (Fumigating Substances used in *Yagya*' --- 1996).^[11]

The interpretation of process of combustion in a

Yagya in a physical scientific terms is rather difficult due to the following reasons:

- (i) The properties of substances which are used are vastly varying.
- (ii) The conditions under which combustion takes place remain unspecified.

The products of combustion depend on the following factors like:

- (a) The nature of substances used and their proportions; (b) Temperature attained;
- (c) Controlled supply of air and (d) Interaction amongst the various products formed.

Various Processes Involved While Performing *Yagya***Vaporization of wood**

Besides complete combustion of cellulose material of wood, it is also subjected to vaporization. This happens due to the way *Samidhas* are arranged in the *Agnikunda*, the conditions of temperature and air supply which prevail in it.

Steam Volatilization of Odorous Substances

The temperature attained in the *Kunda* varies between 250°C and 600°C, while in actual flames it can go as high as 1200°C to 1300°C. The boiling points of volatile constituents get diffused over in the surrounding atmosphere. Also when cellulose and other carbohydrates undergo combustion, steam is formed in copious quantities by the combination of hydrogen of organic substances with the oxygen. This is how the substances like thymol, eugenol,

pinene, terpinol etc., are carried over in the surroundings and the aroma of a *Yagya* can be smelt even at a considerable distance. In addition to steam, smoke is also given out in copious quantities and solid particles existing in a highly divided state offer sufficient surface for mechanical diffusion. Thus smoke also functions as colloidal particles for diffusion of volatile aromatic substances depending on temperature and direction of the wind.

Combustion of Fatty Substances

The invigorating gases produced by the burning of cow's pure *ghee* act in balancing the cycle of nature. Cow's pure *ghee* removes all pathogenic bacteria and works effectively in purification of the atmosphere making it sufficiently fit for mankind, plants and the life on earth. Importance and medicinal qualities of cow-products have been known since time immemorial and forms a part of day-to-day usage. Cow dung contains plenty of menthol, ammonia, phenol, indole compounds, formalin and it eradicates the pathogenic micro-organisms. Fresh cow dung possesses medicinal and curative properties. It is a proven fact that tremendous Active beneficial properties are inherent in the cow dung cake and in the fumes that emanates after burning it. (Agnihotra 1995).^[12]

The fatty substances used in *Yagya* are mainly *Ghee* and other fatty substances of vegetable origin. *Ghee* helps in rapid combustion of cellulose of wood and keeps the fire alight. All fatty substances used are combinations of fatty acids, which volatilize easily. The combustion of glycerol portion gives acetone bodies, pyruvic aldehyde and glyoxal etc. The hydrocarbons produced in the reactions again undergo slow combustion and as a result methyl and ethyl alcohols, formaldehyde, acetaldehyde, formic acid and acetic acids are formed..(Joshi, Rajni R (2011)).^[13]

Photo-Chemical process

When all the volatile substances are diffused in the surrounding atmosphere, these are further subjected to photochemical reactions in the sunlight. This may be the reason why it has been recommended that *Yagya* should be performed in the presence of strong sunlight. These changes occur in the ultra-violet and other short wavelength regions. The products of fumigation thus go photochemical decomposition, oxidation and reduction. To some extent even CO₂ is also reduced to formaldehyde as follows:



From environmental angle, reduction of CO₂ produced in *Yagya* as above and liberation of oxygen cannot be over emphasized. (Fumigating Substances used in *Yagna* 26 to 28 July, 1996).

Material used during *Yagya* process get diffused in surrounding air and undergo photochemical reaction. Fatty substances help in rapid combustion of cellulose matter and release acetone bodies, aldehyde etc. Hydrogen sulphide and nitric oxide released due to cows dung and ghee during *Yagya*, act as bio signaller and involved in growing of new blood vessels and control of psychological disorders, cow ghee provides all fat soluble vitamins like A,D,E,K its work as Antiageing, Antioxidant agents which improves immunity (Sharma H, 2010).^[14]

Fumes generated during *Yagya* is responsible for enhanced tranquillity of mind. *Yagya* renews the cells, tissues, organs and having wholesome effects on circulatory, pulmonary as well as nervous system. (Golechha GR, et.al (1987)).^[15]

घृतं सिद्धार्थकाः श्वेताः कुष्ठं भल्लातक वचाः ।
तगरं भूर्जवर्तं सगुग्गुलु ।। (का.सं.धूपकल्प अध्याय)

As described in *kashyap samhita* *Dhoopa* formulations contains the substances like *Ghruta*, *Guggul*, *Laksha*, *Vacha*, *Sarshap*, *Nimba*, *Haridra*, *Daruharidra* are commonly used for purification of environment and treatment of psychological disorders. When medicinal herbs burnt on sacrificial fire of *Yagya* produce various volatile (nano particles) oils and give a fascinating aroma and spread in the atmosphere along with air and when fume is inhaled being very subtle, it reach up to CNS through nasal route after crossing of blood brain barrier and show its effect on various psychological disorders and create a peaceful feeling inside of person and create freshness and calmness in environment.

Traditional aroma-therapeutic practices, dating back thousands of years, are thus verified by 21st century neuroscience. Equally fascinating is the evidence that an odour-enriched environment increases neurogenesis in adult mouse brain (Guedes DN, Silva DF, et.al (2002)).^[16] Since agents promoting neurogenesis in adult human brain, including the hippocampus, are being investigated in a variety of psychiatric disorders (e.g. depression, dementia and schizophrenia) (Vernet-Maury E, et.al (1999)).^[17]

The herbal medicines in *Yajna* work on the principle of magnified potency by sublization and sublimation. It is a well-known fact the oral medicines consumed in gross form (e.g. tablets or syrup) have lesser effect as compared to those infused in the blood stream directly by injections. If inhaled through breath and the skin pores in vaporized or gaseous form, the same medicine would have many-fold positive effects. Subtlization and sublimation increase their potency exponentially. When one takes an oral medicine (e.g. a tablet), it first reaches the stomach from where *only* a fraction of it goes to the blood after metabolism. The rest gets drained out with urine and faeces. Thus the effect of the drug materializes only partly; this is further reduced if the patient's digestive system is weak. The same drug if infused directly in to the blood stream by intra-venous injection, certainly shows rapid and better effect. However, here too its significant effect could be lessened by the deficiencies (of specific chemicals for instance) in the blood, problems of blood flow etc. The risks of counter-reactions are more in this case as the entire dose reaches the blood almost instantaneously. Moreover, it is not certain, whether the drug reaches the subtle components of the body in the desired form, The healing offered by *Yagya* is free from all such limitations. The sublimated drug (healing substances) reaches each and every *component* of the body through the skin pore and breathing. Respiratory system is most efficient and prominent among all the inlets (for energy and healthy substances) and outlets (for waste and harmful substances) of the body. We intake water and food through the mouth and expel the rejected and rotten portions through the urinary tube and rectum and through perspiration.... The most important source of our survival is given to us by our respiratory system. We all know the necessity of oxygen, which is inhaled by us through breathing. We might sustain our life for several days without food, could even continue to breathe without water for few days, but can't prolong it beyond few minutes in the absence of oxygen. (Joshi, Rajni R (2011)).^[18] The non-stop work done by the respiratory system alone in carrying the vital energy source to every particle of the body, is more crucial and heavier than that of the digestive system and accessory components and organs in maintaining the living body. The respiratory system and the galaxy of skin pores play the key role in enabling the absorption of the *prāṇa*, the energy and the healing currents (including the herbal drug effects) of *Yagya* in the blood, organs and the cellular, molecular and subtler units of our body. (Pandya, Pranav (2009)).^[19]

Role of Rythmic Sound Energy Produced By Chanting Of Mantras

Second important component of *Yagya* is chanting of mantras. The electromagnetic waves generated thereby compounded with the sonic signals encoded in the mantras help in

intensifying and transmitting the desired benefits of *yagya* in psychological disorders and the surroundings atmosphere. Besides, it makes possible the stimulation of causal energy of the materials used in *Yagya* to such an extent that the hidden potentialities underlying them are greatly enhanced. Articles made scared and pious with the help of *Mantra*, if offered by way of blessing act more effectively than even medicines. It is by involving the causal energy of material (*Havishya*) before it is offered in the sacrificial fire, that exemplary successful results are produced to such an extent that even an ordinary substance possesses extraordinary specific powers. If the *Havishya* is simply dropped in the fire, it only creates fragrant smell and proves useful to limited extent. Without chanting *Mantras* it will not be possible to derive benefits, which are expected by performing a *Yagya*.

The power of sound vibrations is long since acknowledged in the field of science. These vibrations can penetrate the energy spheres at the subtle and cosmic levels. All the alphabets of the Sanskrit language are endowed with special vibrational powers, which set out harmonious wave patterns when pronounced. *Mantra* typically involves continually repeating a chosen word, phrase or set of syllables (silently or aloud) while passively disregarding any internal or external distractions. The sound of *mantra* in meditation is proposed to acts as an effective vehicle for overriding mental speech (which is the predominant form of conscious thinking for most people), thus continually redirecting negative or intrusive automatic thoughts which perpetuate psychological distress.

Dr. Howard Steingull, an American Scientist has established that recitation of *Gayatri Mantra* produces 110,000 sound waves per second. In fact recitation of the *Gayatri Mantra* during the fire-worship (*Yagya*) acts supplementary. The patterns of chanting of *Mantras* are so designed that they latently contain the essence of the music or the quite essential sound of the torrent of life sustaining energies emanating from the cosmic energy centre of the corresponding *Mantras*. The cosmic energy centre a deity associated with the *Gayatri Mantra* is Sun. Uttering of these *Mantras* produces vibrations which are soothing to human mind, all plant and animal life. These vibrations also help in spreading specific energy waves in the surrounding atmosphere as the oblations are offered. The number of studies exploring the impact of mantra meditation on indicators of mental health has grown over recent decades, with reductions in burnout, stress, depression, anxiety and trauma symptoms widely observed (S. Leary, K. Weingart, R. Topp, et al., (2018),^[20] (S. Mishra, R. Archana, K.S. Sailesh, et al., (2017),^[21] (P. Pravitha, K.S. Sailesh, A. Joy, et al 2017).^[22]

Various scientific studies have been done to see the beneficial effect of chanting of mantras in psychological disorders, some of them are mentioned here –chanting of gayatri mantra is generally done in yajna which have very good effect on our mind and physical health. In this regard, **A scientific study was published in The International Journal of Indian Psychology vol.3 issue 2 January –March (2017) BY Susan Thomas, Shobinil Rao at department of Clinical Psychology, National Institute of Mental Health and Neuro Sciences, Bangalore, Karnataka India ,performed to see theEffect of Gayatri Mantra Meditation on Meditation Naive Subjects:an EEG and fMRI Pilot Study** - The aim was to study the effect of listening to Gayatri mantra on the brain using Electroencephalograph (EEG) functional Magnetic Resonance Imaging (fMRI). Sample included 8 meditation naive subjects, who have not been practicing any form of meditation after study they found that The EEG study showed that the percentage of gamma and beta waves increased in the post Gayatri mantra listening phase with respect to the pre Gayatri mantra listening phase. Expert Buddhist meditators are found to have a predominance of high frequency gamma waves in their EEG. fMRI study The results showed that the areas that had maximum activation were the bilateral superior temporal gyri, right temporal lobe, right insula, left inferior parietal lobule, lateral globuspallidus and culmen of the cerebellum. For novice meditators, restlessness can arise due to continuous listening to Gayatri mantra. Duration of 10-15 minutes is found to be optimum. There is a minimal increase in the percentage of gamma waves of meditation naive normal volunteers after listening to Gayatri mantra for 15 minutes. In fMRI, the brain areas that were activated in meditation naive normal volunteers during listening to Gayatri mantra included right insula, which is involved in bodily self-awareness and emotional experience.

Mental health promotion focuses on enhancing protective factors and decreasing risk factors for developing mental health problems, and represents a core component of national and International action plans on mental health policy.(WHO Press, Geneva, Switzerland (2013)).^[23] Mind-body interventions offer non-pharmacological techniques to foster positive mental health in both clinical and non-clinical populations. Mantra chanting typically involves continually repeating a chosen word, phrase or set of syllables (silently or aloud) while passively disregarding any internal or external distractions. The sound or mantra in meditation is proposed to act as an effective vehicle for overriding mental speech (which is the predominant form of conscious thinking for most people), thus continually redirecting

negative or intrusive automatic thoughts which perpetuate psychological distress. Various subtypes of mantra meditation exist, including OM chanting. (H. Benson 1974).^[24]

The configurations of special syllables in *mantra* and the *Vedic* patterns of chanting them during *Yagya* are derived from absolute research by the *ancient Scientists* on the deeper sciences of - gross and subliminal sonic vibrations, music and consciousness. The *collective* chanting of *mantras* in adept rhythm in front of *Yagy agni* magnifies the *Mantra-Shakti* exponentially and expands the *mantra*-vibrations to unlimited heights in all dimensions. The superimposition of sound waves generates immense power in ordinary case too; there are many familiar examples that illustrate this fact in day-to-day life. The power of sound in *mantras* is far more refined, intense and deep. Apart from the gross impact of the specific patterns of sonic waves generated by *mantras*, the *mantra-shakti* is also endowed with the limitless subliminal force of the spiritually enlightened consciousness of the *yajakas*. This spiritual effect is intensified by the purity of the mind and heart, devout determination and *shraddha* of the latter. The esoteric science of *mantras* was so advanced in the times of yores that *mantras* were used as weapons and missiles; in transmutation of a sick and dying body into a youthful, *strong* one. *Mantras* used to effectuate timely materialization of the curses and boons of the *rishis* and great *sadhakas* who had attained mastery in this supernatural science. The *Yagya*-energy induces unique force in expanding the effect of *mantra-shakti* almost instantaneously. The modern science affirms three basic streams of energy indwelling in Nature –sound, heat and light. Of these, the velocity of heat and light is unimaginably greater than that of sound. In the process of *Yagya*, the natural conjugation of the enormous heat and *Yagya*-energy with *mantra-shakti* and the collision of the superimposed sonic waves of collective *mantra* chanting with the quivering flames of the *Yagyagni* induce infinite speed and amplification of the *mantra-shakti* and help it expand up to cosmic domains in feasible time.

Pharmacokinetic modeling and evaluation showed that pulmonary inhalation of *Yagya* fumes significantly imparted higher bio-availability of phyto-medicines in blood, and provided higher lung deposits of phyto-medicines as compared to oral and intravenous administration of modern drugs. (Joshi et al).^[25] Medicinal-smoke of herbs for therapeutic purposes has been used globally. Practice of the inhalation of herbs through lungs route has prevailed in various cultures throughout the world. Fire is a scientific method of sublimation of matter into energy and expanding its potential and positive effects in the surrounding atmosphere. The

electromagnetic waves generated thereby help in transmitting, at cosmic level, the desired sonic signals 'stored' in the *Mantras*, which are chanted during the process of sacrificing the special materials in the fire. The *Bhasma* (ash) of *Yagya* also has medicinal value, as it contains compounds products of synergistic reactions of the plant medicines that are processed in the *Yagya* fire. The coarse ash left in the fire pit is collected after the *yajna* when the fire extinguishes and it cools down. The ash is then filtered. The finer powder thus obtained is called *Yaj nabhasma*.

Yagya is an ethanobotanical inhalation process derived from the ancient medical sciences of India. Scientific validity and technical evaluation of this Vedic ritual in recent times indicate its enormous potential therapeutic applications.

CONCLUSION

Yagya can be considered as the ultimate combination of all three forms of *chikitsa* *Daivvyapashrya*, *yuktivyapashrya* and *satvwavjaya*. As every living being is synchronized with universe, therefore, satisfying the panchtattva and universe elements, results in the satisfaction and balance to the man as well as body within. The scientific studies conducted on various components of *Yagya* clearly demonstrate that it was designed for multifaceted action to clean the external environment as well the body toxins responsible for causing diseases and to control the various conditions created in pandemics like Covid-19.

The *Yagya*-based process of medical treatment as devised by the *rishis* of yore provides an excellent alternative in this context. It offers dual effects of destroying the germs and viruses and at the same time elevating the vitality and resistance of the body without any risk of side effects and without cost constraints. Adept processing of *Yagya* every day, ensures health and vigor for the *yajakas* and annuls the possibilities of the latter suffering any disease or ailment. Because of its *unique* support to mental health and environmental purification *Yagya* is indeed a boon for total health.

REFERENCES

1. Joshi RR. The Integrated Science of Yagna. <http://literature.awgp.org/magazine/Akhand-Jyoti-english/2003/MarApr/ScientificAspectsOfYajna>.
2. Raghuvanshi M, Pandya P, Joshi RR. Yagyopathic Herbal Treatment of Pulmonary Tuberculosis Symptoms: A Clinical Trial. *Altern Complement Ther.*, 2004; 10.
3. Sharma S, Sharma B devesh, editors. *Rigved samhita*. Revision, 2013.

4. Sharma S. Psychiatry, colonialism and Indian civilization: A historical appraisal. *Indian J Psychiatry*, 2006; 48: 109–12. [PMC free article] [PubMed]
5. Mills J. The history of modern psychiatry in India 1858-1947. *Hist Psychiatry*, 2001; 12: 431–58. [PubMed] [Google Scholar]
6. Sharmas Acharya Vangmay No 25) [Internet]. Akhand Jyoti Sansthan, Mathura-281003, 1994.
7. Raghuvanshi M, Pandya P, Joshi RR Yagyopathic Herbal Treatment of Pulmonary Tuberculosis Symptoms: A Clinical Trial. *Altern Complement Ther.*, 2004; 10.
8. Turker, S., et al. Nasal route and drug delivery systems. *Pharmacy World & Science*, 2004; 26: 137–142.
9. Tripathi, K. D. Essentials of medical pharmacology (Ist ed.). New Delhi: JP Brothers, 2010.
10. Turker, S., et al. Nasal route and drug delivery systems. *Pharmacy World & Science*, 2004; 26: 137–142.
11. Fumigating Substances used in *Yagna*’ --- article published in the proceedings of *Ashwamwdha Yajna* held in Montreal, Canada (26 to 28 July, 1996).
12. (*Agnihotra* : The Message of Time’ --- Paper by Dr. Madhukar P. Giak-wad, 1995).
13. Joshi, Rajni R The Integrated Science of Yagya (Rev. Ed.). Mathura, Uttar Pradesh, India; Yugnirman yojna vistar trust Gayatri Tapo Bhumi, 2011.
14. Sharma H, Scientific principles in vedas, the massive scientific principles Vedpradip, 2010.
15. Golechha GR, et al. Agnihotra- A useful adjunct in recovery of a resistant demotivated smack addict. *Indian J Psychiatry*, 1987; 29(3): 247-252.
16. Guedes DN, et al. Muscarinic agonist properties involved in the hypotensive and vasorelaxant responses of rotundifolone in rats. *Planta Med.*, 2002; 68: 700-704.
17. Vernet-Maury E, et al. Basic emotions induced by odorants: a new approach based on autonomic pattern results. *J Autonomic Nervous Syst.*, 1999; 75: 176-183
18. Joshi, Rajni R The Integrated Science of Yagya (Rev. Ed.), 2011.
19. Pandya, Pranav Reviving The Vedic Culture of *Yagya* (First Ed.). Haridwar. India; Ved Mata Gayatri Trust, Shantikunj., 2009.
20. S. Leary, et al., The effect of mantram repetition on burnout and stress among VA staff, *Workplace Health Saf.*, 2018; 66(3). <https://doi.org/10.1177/2165079917697215> .

21. S. Mishra, R. et al. Beneficial effects of OM chanting on perceived stress, auditory and visual reaction time in private school teachers, *Int. J.Res. Ayurveda Pharm.*, 2017; 8(2): 79–81. <https://doi.org/10.7897/2277-4343.08269>.
22. P. Pravitha, et al. Effect of chanting and Strotram on perceived stress and cognitive functions in underweight females, *Int. J. Res. Ayurveda Pharm.*, 2017; 8: 104–108. <https://doi.org/10.7897/2277-4343.08149>
23. World Health Organisation **Mental Health Action Plan 2013–2020** WHO Press, Geneva, Switzerland, 2013. [Google Scholar]
24. H. Benson, et al. The relaxation response, *Psychiatry*, 1974; 37(1): 37–46.
25. Joshi RR, Raghuvanshi M, Pandya P. Yagyopathy versus oral and iv drug administration.