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Meditation: The natural immunity booster ploy against SARS-CoV-2

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Abstract

The SARS-CoV-2 has created a pandemic by causing COVID-19 and still no convincing method of medication is available so far to fight this deadly virus. The wonder drugs of past have become obsolete against this virus. Based on extensive research on this pandemic, it is proved that the immunity of an individual determines the lethality of this virus; therefore, immunity boosting therapy is the best way to counteract this virus. Keeping this in view, the present article highlights the importance of meditation in the enhancement of immunity of individuals. This technique is very simple and can be adopted easily without any side effects.

Keywords

Coronavirus, Immunity, Meditation, SARS-CoV-2, Yoga

1. Introduction

Coronavirus family includes various virus that are known to cause common cold and cough in human beings. Some of the members can also infect animals, such as castles, bats, camels, *etc.* But, the SARS-CoV-2, the novel form of this family created a pandemic by causing COVID-19 (Hamre and Procknow, 1966; Chan *et al.*, 2020). It was first spotted in China (Wuhan) in late 2019 and grasped the humanity in very horrified way. Since its recognition, there have been numerous investigations initiated to determine the origins of SARS-CoV-2, but any conclusive statement is yet to be made. On its emergence, it was initially thought that SARS-CoV-2 made the spread to humans from an open-air market of Wuhan, China and later theories stated apprehension that it may have invented as a biological weapon in a lab by Chinese scientists. This virus spread both inside and outside China and infected those people too who never contacted with animals. It proved that this virus is transmitted from one human to another which resulted into a worldwide transmission as a pandemic (Zhang *et al.*, 2020).

1.2 Evolution of coronavirus

Researchers first recognized a human coronavirus in 1965 which was infective and caused common cold. Later, scientists found a group of parallel human and animal viruses and named them 'corona' after their crown-like appearance. It is evident that seven coronaviruses can infect humans. However, the virus that causes SARS appeared in southern China in 2002 and had speedily blown out to about 30 countries. Approximately, 10,000 people were infected by July 2003, and around 800 infected persons died. Far along, a small outbreak in 2004 involved only four more cases. This

coronavirus causes fever, headache and respiratory problems such as cough and shortness of breath. Likewise, MERS emerged in Saudi Arabia in 2012 where about 2,500 cases have been registered in those persons who lived in or traveled to the Middle East. However, this strain of coronavirus was less transmissible than its SARS counterpart, but it was more fatal and killed 858 people. It has symptoms like SARS but also caused kidney failure. It is uncertain that how the virus entered the human populace and whether the Himalayan palm civets were the natural source of the virus. However, preventive policies to restrain infection may have subsidized the SARS, epidemic (Peiris *et al.*, 2003).

1.3 Genome and structure of coronavirus

These are medium-sized RNA viruses with a very distinguishing appearance in electron micrographs. The RNA is about 30 kb long which is the largest known, + sense, single stranded and polyadenylated sequence which generates a large polyprotein. This large polyprotein is sliced by viral-encoded proteases resulting into the formation of an ATPase helicase and an RNA dependent RNA polymerase. While a surface hemagglutinin-esterase protein existing on OC43 and numerous other group II coronaviruses; the large surface glycoprotein (S protein) that forms the petal-shaped surface projections; a small envelope protein (E protein); a membrane glycoprotein (M protein); and a nucleocapsid protein (N protein) that forms a complex with the RNA (Chan *et al.*, 2020). The coding functions of several other ORFs are yet to be defined. The tactic of coronaviruses replication involves a nested set of messenger RNAs with common polyadenylated 3-ends. Only the unique portion of the 5-end is translated (Lai and Holmes, 2001).

Cytoplasm of the infected cells is the site of all coronaviruses maturation, where they start budding into cytoplasmic vesicles from the endoplasmic reticulum. These newly formed vesicles are either released or extruded from the cell simultaneously, resulting into cell destruction (Yeager *et al.*, 1992).

2. Recommended curative procedures and treatments

As COVID-19 cases continued to rise across the globe during 2020 and 2021, public was running from pillar to post in quest of drugs that provide possible treatment. At that time several drugs, *viz.*, fabiflu (favipiravir), remdesivir, ivermectin, doxycycline, dexamethasone and other corticosteroids were in great demand and people were buying these at any cost. Recently, most of the countries have removed the use of plasma therapy and cited it 'inappropriate and ineffective'. Likewise, the effectiveness of remdesivir is also in

question (Ali *et al.*, 2020). However, many of the infected people recovered without any medicine and hospitalization due to their better immunity compared to the affected ones. It was observed that more than 70% infected people were get rid of this deadly virus with home isolation along with herbal formulation and yoga. Those who had the poor immunity were the most affected and needed proper hospitalization, ventilators and oxygen support. Temporarily, at that time an antibody drug cocktail for COVID-19 treatment by 'Roche' received approvals for emergency use authorization from the Central Drugs Standards Control Organization (CDSCO). Later, some evidences were supporting the use of steroids in the treatment of COVID-19 and initially WHO trials showed that steroids can benefit COVID-19 patients, but later it was noted that that premature and erroneous use of these drugs can lead to more complications than benefits in the form of a fungal disease called mucormycosis. Even today, there is no specific treatment is offered for COVID-19, and the best preventive recommendations includes use of herbs (Alam, 2019), exercise and meditation to boost up the immunity against such deadly attacks (Jayk Bernal *et al.*, 2022).

Hence, it is clear that no full proof medication is available as preventive and curative measure. But, one thing is clear that the immunity enhancement is the only way to fight with this deadly virus (WHO, 2019). The perfect metabolism of a stress-free individual usually provides the strong shield of immunity against the pathogens. For this, the art of meditation is very promising method to reduce stress which boosts the overall immunity. Keeping this in view, the present article highlights the importance of meditation for easy survival against day-by-day increasing pathogenic attacks including coronavirus (Behan *et al.*, 2020).

3. Meditation: A modest and swift way to lessen stress

Meditation can remove the daily stress, bringing with it internal peace. Stress creates nervous, worried and bothered situation which disturb the normal metabolism and in such situations, meditation helps to calm down and induces the normal execution of metabolism within a little time in a simple and inexpensive way (Epel *et al.*, 2016). Unlike other exercises, it does not need any distinct apparatus. The other remarkable thing is that anyone can practice meditation anywhere at ease; for instance, during a walk, in a bus, at the clinic or even in the mid of a tough occupational conference.

3.1 Understanding meditation

Meditation is an old art which has been experienced for thousands of years. Meditation initially was destined to aid excavate understanding of the holy and spiritual forces of life. However, in present time, the art of meditation is frequently used for letup and stress lessening. Meditation is well-thought-out as a type of mind-body harmonizing remedy. Meditation can provide a profound state of relaxation and a peaceful mind.

During meditation, we must focus our consideration and eradicate the hundreds of topsy-turvy feelings that may be flocking the mind and triggering stress. This procedure may provide the improved physical and emotive well-being.

3.2 Benefits of meditation

Meditation can provide a sense of calmness, peace and equilibrium that hugely benefits the person both emotionally and physically.

The meditating person is better in relaxing and coping stress than non-practicing individuals because meditation assists a person to stay balanced due to the inner peace. These paybacks donot end with the end of meditation session as the few minutes can help for a whole day to remain calm and focused. Calmness due to meditation is also helpful in managing the symptoms of specific medical conditions (Black and Slavich, 2016).

3.3 Enhanced emotive and physical well-being

When a person meditates, one starts receiving many emotional and physical benefits, such as, gaining a new standpoint on worrying situations; building skills to manage the daily stress; increasing self-awareness; focusing more on the present rather the past or future; reducing negative emotions; increasing positive thoughts and creativity; increasing endurance and acceptance; lowering resting heart rate and blood pressure; improving sleep quality, *etc.* All these addition to the daily life improves the metabolism and subsequent immunity to many folds and the meditating person becomes better performer than the non-meditating individual in a similar challenging circumstance.

3.4 Meditation and illness

Meditation can also be useful anyone suffering with stress induced where meditation may benefit people to manage symptoms of conditions, *viz.*, asthma, anxiety, chronic pain, cancer, depression, high blood pressure, heart disease, sleep problems, irritable bowel syndrome, tension headaches, *etc.* However, before starting the meditation, it is advisable to consult your doctor who can guide you according to your health history (Behan *et al.*, 2020).

3.5 Kinds of meditation

Meditation is a cumulative act for the numerous ways to attain a calm state of life. There are several types of meditation and easing techniques that have meditation mechanisms. However, the only goal is to achieve precious inner peace. These ways embrace guided meditation/imagery/visualization, Heartfulness meditation, mantra meditation, mindfulness meditation, transcendental meditation and Yoga.

3.6 Fundamentals of meditation

Diverse types of meditation may comprise dissimilar features to support in meditation. These may differ reliant on whose direction anyone follow or who's instructing a class. Some of the most common facets in meditation include:

3.7.1 Intensive attention

Concentrating your attention is helpful to free the mind from the numerous disruptions that cause anxiety and fear. One can focus the consideration on such things as a precise object, an image/picture, a mantra/verses, or even your own breathing.

3.7.2 Calm breathing

This method encompasses deep, stable breathing *via* the diaphragm to enlarge the lungs. The drive is to slow down the process of breathing, excess oxygen intake, and lessen the use of neck, shoulder and muscles of upper chest during the process to induce efficient breathing.

3.7.3 A silent location

A serene and quite surroundings without any distracting objects like radio, television, cellphones is ideal for any beginner to meditate. With practice the skill enhances and meditation can be performed at any place, particularly in situations of high stress where the need of meditation is utmost.

3.7.4 A relaxed position

Meditation can be practiced in any comfortable position such as lying down, sitting, walking, *etc.* However, a relaxed mind with perfect posture are required.

3.7.5 Get away attitude

During meditation, one should try to skip the thoughts without analyzing them, *i.e.*, without judgment.

3.7.6 Daily practicing meditation

First, do not take stress of meditation daily in the beginning but try to do it as a daily routine of few minutes like other regular works. Secondly, both the guided and unguided meditation techniques are available and one can approach a specific meditation system. Nowadays there are several free apps that are available and can be used for learning meditation. Finally, one must experience and feel, and then decide to follow a mediation practice which suits the person best. Here are few ways to practice meditation:

3.7.7 Deep breath

This method is good for trainees since breathing is a normal function of our body. In this focus all your consideration on your breathing. Focus on sense and listening the nostril's voice of inhalation and exhalation. Breathe deeply and unhurriedly. In case of any disturbance, you can gently coming back your focus to breathing.

3.7.8 Scan your body

Attention should be given on diverse parts of the body. One should become conscious towards the body's diverse feelings, *viz.*, tension, pain, temperateness or easing. Take up body perusing with breathing and envisage breathing heat or easing into and out of diverse parts of the body.

3.7.9 Heartfulness meditation

It is a guided meditation. One sits in a comfortable posture with a straight back and meditates on a heart, fully relaxed with a suggestion that there is divine light in my heart which is attracting me.

3.7.10 Recurrence a mantra

Any mantra can be used according to different religions or you can create any word if you are secular. These may include the holy name of Jesus/Om/Allah, *etc.*, according to the practitioner's belief/faith.

3.7.11 Meditation during walk

Merging a walk with meditation is an effectual and vigorous method to relax. This technique can be used anywhere during walking, such as in a peaceful forest, on a city footway or at the shopping mall. In this method, the pace of walking should be slow down and focus should be on each foot movement. Any destination should not be focused during this practice except concentrating on legs and feet along with focusing on the surrounding sounds, sights and smells.

3.7.12 Participate in prayer

Prayer is the best recognized and most extensively practiced instance of meditation. Any type of prayers can be used for this method but during reading or recitation full involvement is necessary without any distraction.

3.7.13 Read and listen

A person can meditate through concentrated reading and listening to music of choice. Likewise writing the reflections or discuss the text can also provide calmness.

3.7.14 Love and kindness

The feeling of love and kindness of a person is a type of meditation because it removes the negative thoughts and give a sense of humanity. It is the easiest way of meditation in which others are also benefitted.

4. Discussion and Conclusion

The World Health Organization suggested few guidelines during the coronavirus pandemic which were also implemented by various governments around the world. These guidelines include frequent washing of hands; maintaining social distance; avoiding touching face, eyes, nose and mouth; self-isolation and practicing good respiratory hygiene. If, anyone practicing meditation, then one is following these guidelines unknowingly and is benefitted vastly with added advantages of boosted immune system; lessening anxiety; improved emotional health, *etc.* The meditation is a very simple and inexpensive process which can be started by anyone with ease. Hence, to fight against coronavirus, the practice of meditation is a wonderful ploy and should be accepted as soon as possible. Other than meditation, every available option against coronavirus has its pros and cons, and therefore related hesitation is expected. However, in meditation, there is no such issue and it is completely safe and efficient way to prevent the spread of coronavirus.

The field of phytomedicine is a complicated stream which majorly includes phytochemistry, pharmacology, ethnobotany, *etc.* Considering the huge diversity of medicinally important plants, the ongoing research requires a good platform to showcase the research findings which can be spread worldwide. In this perspective, 'Annals of Phytomedicine: An International Journal' is providing the much-needed platform with both online and print versions since last 10 years. The whole process of publishing is very stringent and upholds an excellent conduit to publish quality research outcomes in the area of medicinal plants.

During corona pandemic, the journal has started its COVID special volumes with the same quality and the articles published in the past special volumes have attracted the various readers and were cited by other reputed journals, even WHO listed all articles.

I am pleased to escalate this initiative and achievements of the journal, 'Annals of Phytomedicine: An International Journal' and hope with confidence that fully committed scientific team of this journal will continue to shine in future too with greater glory, scientific recognition and many more accomplishments and new achievements.

Conflict of interest

The author declares no conflicts of interest relevant to this article.

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Biography

Professor Vinay Sharma, is currently serving as Dean Research and Director, Amity Institute of Biotechnology, Amity University, Rajasthan, Jaipur since May 2018 and has over 36 years university level experience of teaching and research in Plant Sciences/ Biotechnology. Earlier, he has served as Associate Professor at Department of Biotechnology at University of Roorkee (I.I.T. Roorkee) during 1986-96 and later as Professor and Head, Department of Bioscience and Biotechnology and Dean, Faculty of Science and Technology at Banasthali Vidyapith during 1996-2018.

He has been honoured with many prestigious fellowships and awards in India and abroad. To mention a few: Professor Sharma is a Fellow of National Academy of Sciences (FNASc), Fellow of Biotech Research Society (FBRS) and Fellow, The Indian Society of Genetics, Biotechnology Research and Development. He was honoured with Distinguished Scientist Award (2013) and later H.S. Srivastava Memorial Award-2016 by Society for Plant Research. He is a Mentor, DST-INSPIRE Programme. Earlier, he was awarded Zahoor Qasim Gold Medal by Society of Biosciences, Young Scientist Award by Indian Science Congress Association and has been a Member of The New York Academy of Sciences.

Professor Sharma had extensive international research experience as Visiting Scientist/Professor at many institutions, viz., Institute of Botany, University of Koeln, Max Planck Institute, Koeln, Technical University, Darmstadt, Germany, University of Central Florida, USA, Institute of Bioresources, Okayama, Japan, Shanghai Polytechnic University, China and others. He was nominated to visit Germany and later to Hungary under the prestigious INSA bilateral exchange programme (INSA-DFG and INSA-HAS) and has been a DAAD Fellow too.

His Broad Research Area is Plant Stress Biology/Molecular Plant Physiology/Biotechnology/Bioinformatics. He has published 360 Full Research Papers with an h index of 36 and i10 Index of 118 with over 4500 citations. He has authored 8 books and is on the editorial board of several research journals. He has mentored 75 doctoral

students in his supervision who are well placed and many of them are employed as faculty in Indian and Foreign Universities and Industries.

Professor Sharma has handled many university/department level major projects as well as R & D Projects. For instance, he has been Coordinator, M.Sc. Biotechnology Programme, DBT, Coordinator, Centre for Bioinformatics, DBT and Coordinator, DST FIST Programme. Professor Sharma has successfully handled research projects funded by different scientific agencies including DST, DBT, ICAR, UGC, DRDO, India, JSPS, Japan and DAAD, Germany as PI/ Co-PI.

Professor Sharma has Chaired sessions and has delivered over 100 invited/inaugural/lead lectures in various symposia/conferences in India and abroad including Spain, Portugal, U.K., Italy, China, Japan, USA, Hungary and Germany. Professor Sharma has published 355 research papers, has authored 8 books and is on the editorial board of several research journals. He has mentored 75 doctoral students. He holds the life membership of 9 prestigious scientific bodies. Professor Sharma has organized 2 International conferences, 2 National conference, 1 International symposium, 2 National symposia and 12 National Workshops as Convener/Co-convener/ Organizing Secretary. Besides have been Member of the Advisory Committee of at least 30 other confs/symposia, etc.

In addition to his impeccable research and teaching credentials, Professor Sharma has highly rich administrative experience, viz., 27 years as the Department Chair (Bioscience and Biotechnology) and 23 years as the Dean in various capacities. At Banasthali Vidyapith, he took many new initiatives of major research and development grant, such as DBT Centre for Bioinformatics, DST FIST programme and successfully handled the DBT supported M.Sc. Biotechnology Programme for 22 years. During his tenure as the Dept. Chair, many new programmes were also started such as M.Tech. Biotechnology, M.Sc. Bioinformatics, M.Sc. Applied Microbiology and Biotechnology, B.Tech. Biotechnology, B.Sc. Biotechnology were also started. He has been a member/Convener of various academic and

administrative bodies. He has also been a Member, Rajasthan State Biotechnology Advisory Board, Govt. of Rajasthan (2004-09); Expert Member, R & D Project Committee, DST Rajasthan, Resource Person, DST, New Delhi Brainstorming session, Udaipur (2018), Expert Member, Bioinformatics Committee, State DST, Jaipur. He has also been Expert Member of Selection Committees of many Universities, Selection Committees of MHRD, Govt. of India; Expert Member, Board of Studies of more than 10 Universities, Academic Council, and Member, Advisory/Other Committees at several

institutions (*e.g.*, Member, DBT Programme Advisory Committee at Indore; Member, DBT Programme Advisory Committee at Bhopal; DBT Institutional Biosafety Committee at Central University Rajasthan; and many others).

Overall, Professor Sharma combines the qualities of a great researcher, teacher, administrator, communicator, motivator and adviser. Currently, he is mentoring several young scientists for innovative research at Amity University, Rajasthan.