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Editorial

Significance of AYUSH: India's first line of defence against COVID-19



Globally, the COVID-19 pandemic has created a huge turmoil and an existential crisis and most countries are experiencing unprecedented challenges related to healthcare, social, political and economic systems. As the pandemic situation in India was improving after the massive disruptions caused by COVID-19, the second wave arrived. WHO reports indicate that India is now home to nearly 43% of the global new cases of COVID-19 and the numbers continue to soar exponentially as this goes to print. Sharing substantial burden of the global COVID-19 deaths now, India's healthcare system is overburdened and overwhelmed.

India managed the first wave with a relatively lower fatality rate than most of the developed countries. The main reasons attributed to the milder assault and a safe escape include the demographic profile of younger population, lower obesity prevalence, and cross-immunity from other coronaviruses. In addition, although largely undocumented, the role of home-based, deep-rooted traditional health practices particularly, by the underprivileged social strata cannot be undermined. Data from the AYUSH Sanjivani App developed by the Ministry of AYUSH (MoA), Govt of India, indicates that over 80% of Indians have used simple home remedies and traditional medicine for prevention and to a lesser extent for treatment of mild-moderate COVID-19. A public health approach of traditional medicine and yoga in prophylaxis of COVID-19 has been well-recognized [1].

However, today the situation is rapidly changing with the second wave and the entry of mutant strains. This time, the virus seems to have arrived back with a stronger assault and has created a much larger cloud of fear, panic and anxiety.

1. First line of defence

As the saying goes – “Wars are won not on the battlefield but before one enters the field”. Vaccines have just stepped into the field with a limited level of reach and effectiveness. It is too early to expect their benefits at a population level. However, considering the larger threat, it is time for India to refine and build on her unique cultural strengths. This is an urgent necessity, given the lack of infrastructure and several other essentials. Within the unfolding adversity lies an opportunity for India to be smart and innovative with the treasure of her traditional health systems.

The AYUSH sector has important resources as a first-line defence in the current crisis. Simple and safe remedies from AYUSH systems can prevent and reduce severity and progression of the infection and thus, lower the need for hospitalization. We need to mobilize necessary AYUSH resources and capacity to meet the challenges posed by COVID-19. In this context, it is noteworthy that the MoA and Ministry of Health & Family Welfare (MoHFW), Govt of India, have

undertaken a joint effort wherein over 33,000 AYUSH doctors have been trained to offer COVID care. Under this cascade model, subsequently, about 66,000 AYUSH personnel have been trained through the 'igot.gov.in' platform. These are only a small portion of the huge AYUSH resource pool consisting over 800,000 registered practitioners spread across 900 medical colleges, 4000 hospitals, 50,000 beds, 11 national institutes and 27,200 dispensaries all over the country. It will certainly be prudent to utilize this strength. Adequate resources need to be devoted to enable AYUSH facilities to offer services as per the approved protocol for prevention, care of mild to moderate cases, and most importantly, for post-COVID care and rehabilitation for which the biomedical system has limitations.

2. Reducing the burden

It is observed that only about 20% patients present moderate to severe symptoms. Such cases remain vulnerable and need to be protected. Any delay in care for this segment can lead to progressive deterioration with complications. It is necessary to reduce caseloads of new cases, and quickly treat infected cases to contain the chain of transmission. The State and Central Governments are taking several measures; yet, the health system in India is under tremendous pressure. Several States are facing acute shortage of oxygen, ventilators, beds and, most importantly, specialist doctors, nurses, and healthcare workers. In the current disaster, we should not close our minds to simple and safe remedies from AYUSH systems to complement the vaccine. This can reduce the progression of the infection and thus, lower the need for hospitalization. Rapidly mutating SARS-Cov-2 virus and growing incidence of reinfection even among those vaccinated is posing newer challenges. It is thus crucial, to boost individual-level immunity to deal with the known and emerging strains of the virus. There is an urgent need to promote therapies that improve the inherent capacity of the body to fight against infections.

The MoA has taken several progressive initiatives to combat against COVID-19 [2]. AYUSH infrastructure is a national resource, which needs to be respectfully invited in the battle against COVID-19. The role of AYUSH in prevention, treatment, and post-COVID management is of substantial importance. Integration of AYUSH in clinical practice and public health in the national efforts against COVID is immediately needed in the current crisis. India can substantially enhance its anti-COVID efforts by optimally utilizing the strengths of AYUSH systems and spreading them widely both in urban and rural areas.

Some States like Gujarat, Goa, and Kerala have tried greater involvement of AYUSH systems with success. Efforts like 'Dhanvantri Rath' in Ahmedabad are noteworthy where AYUSH graduates, paramedic and nursing staff along with local Medical Officers from Urban Health Centres provide non-COVID essential services

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at people's doorsteps. The All India Institute of Ayurveda has successfully treated hundreds of mild and moderate COVID patients as well as effectively managed post-COVID recovery. This model deserves to be adopted at other hospitals in the country. In order to implement this, a consensus between MoA and MoHFW regarding integrating respective protocols is necessary to bring clarity at the ground-level clinical management of COVID-19.

3. Evidence of efficacy

There is good empirical and preclinical evidence to show that *Rasayana* drugs such as *Ashwagandha*, *Guduchi*, *Amalaki* help in B and T cell proliferation, NK cell activation, selective Th1 upregulation, increased CD4+, CD8+ count, and decreased IL1b and IL6 – all this can play a crucial role in strengthening the non-specific immunity and prevent infections.

The MoA-Council of Scientific and Industrial Research collaboration has recently released the results of a randomized controlled trial (RCT) on the Ayurvedic drug, AYUSH-64. Interestingly, this multi-centric RCT is one amongst four ambitious studies undertaken as an inter-ministerial collaboration involving MoA, Ministry of Science & Technology, and MoHFW. Under a collaborative agreement, the MoA and Department of Biotechnology are studying effects of AYUSH medicines on cells, tissues, and animals. Its robust study protocol was subjected to rigorous peer review and advice from Indian Council of Medical Research scientists.

The clinical outcomes of AYUSH-64 clinical study in the treatment of mild to moderate cases of COVID-19 as an adjunct to Standard of Care (SoC) are highly encouraging. Results of this RCT conclusively showed significant promise, resulting in lesser period of hospitalization as compared to SoC alone. Several other beneficial effects on general health, reduction in fatigue, anxiety and stress, improved appetite, general mood and sleep were also observed. In short, this controlled drug trial has provided substantial evidence that AYUSH-64 can be safely used as an adjuvant to SoC to treat mild to moderate cases of COVID-19. The MoA has already recommended the state licensing authorities/regulators to add new indication of AYUSH-64 for repurposing it in the management of mild to moderate COVID-19 infections.

A few other interesting studies are on the verge of completion. These include one on comparing the role of *Ashwagandha* and hydroxychloroquine for COVID-19 prophylaxis among high-risk healthcare providers. Another set of RCTs evaluate the role of *Guduchi*, *Pippali* and *Yashimadhu* in mild to moderate COVID-19 infections. Studies are also underway on the Siddha medicine, *Kabasura Kudineer*, as well as on a few Unani and Homeopathic drugs. A reasonable evidence regarding the beneficial effects of Yoga in prevention and post-COVID recovery has also emerged. Daily practice of *Pranayama* has shown to be protective against COVID infection in a cohort of healthcare providers in an RCT conducted at Morarji Desai National Institute of Yoga [3]. Various case reports suggest that practice of Yoga including *Asana*, *Pranayama*, and meditation is beneficial in improving mental health. Simple exposure to sunlight is known to trigger synthesis of vitamin D that increase body's immunity.

4. Promoting AYUSH remedies

“Prevention is better than cure” is a well-accepted principle of public health. AYUSH systems lay greater emphasis on preventive aspects and are culturally appropriate, placing the individual at the center of care, and empowering them to take care of themselves. Ayurvedic concepts of *Dinacharya* (daily regimens), *Ritucharya* (seasonal regimens), and *prakriti*-specific diet prescription are vital to maintain a healthy life.

A widespread promotion of AYUSH therapies across the country can empower families and communities to manage the ongoing COVID threat with locally available resources and through self-care. AYUSH therapies need to be scaled up into a campaign, like a mass movement. For this, 25 million Panchayats and 9000 urban local bodies across India can play an active role. Accredited Social Health Activists (ASHAs) are an important grassroots resource who command the trust of their communities. ASHAs can emerge as the network of safety guards by promoting preventive measures and selfcare through simple AYUSH medicines. Suitably trained ASHAs can be empowered to use appropriate AYUSH medicines early-on, at the onset of the disease and thus, help control the progression of the disease and avoid need for hospitalization. All registered medical doctors in the country may be authorized to advice AYUSH therapies in accordance with the guidelines as the first-line of defence against COVID-19.

5. Ethical and economical concerns

Several questions remain unanswered and unresolved even after a year of the COVID pandemic, including a key question regarding the origin. There is indeed scarcity of reliable data; be it epidemiological, biological or clinical. While we are facing the heat of the second wave, emerging predictions of the third wave are likely to create more fear and confusion. In the absence of a definitive curative agent, irrational prescriptions, over-diagnosis and exploitation are rampant. Such unethical behavior, vested interests and hidden business agendas need to be contested globally. It is unscientific and unethical to promote drugs such as hydroxychloroquine as prophylactic or remdesivir as a lifesaving drug in COVID-19 without having enough scientific evidence. The costs of new drugs and vaccines are going beyond the reach of common people. In this context, it is noteworthy that an appeal for the temporary waiver of intellectual property on COVID-19 vaccines made by the Prime Minister of India, Shri Narendra Modi, is getting increased endorsements from the United States and many other countries. Such decisions can greatly help in increasing the availability and reducing the cost of essential drugs and vaccines against COVID-19.

In conclusion, the AYUSH sector is the old, wise soldier in India's fight against COVID-19. It is indeed our first line of defence to provide preventive, supportive, and rehabilitative care for post-COVID management. India needs to optimize its existing healthcare strengths and resources to empower communities. A decisive, imaginative and inclusive policy to overcome the existential crisis posed by the COVID-19 second wave is urgently needed.

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Bhushan Patwardhan
AYUSH, Savitribai Phule Pune University, India
E-mail: bpatwardhan@gmail.com

Rakesh Sarwal
NITI Aayog, Government of India, India