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Addressing the Long COVID Crisis: Integrative Health and Long COVID

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Abstract

While COVID-19 has killed millions of people globally, its lasting effects on the health and well-being of entire populations are just becoming clear. As many as 30% of those diagnosed with COVID-19 report continuing health-related problems, regardless of the severity of the initial infection. Given the infection rate in the world, that translates to between 5.4 and 17.9 million globally; about 700 000 in the US. The syndrome goes by many names; here we call it "long COVID." Patients experience a wide range of symptoms, including serious organ system effects such as pulmonary fibrosis, myocarditis, new diabetes diagnoses, stroke, and other cerebrovascular events. They also experience ongoing pain, fatigue, and cognitive dysfunction. We suggest here that these patients require an integrative health approach, one that combines traditional medical management, non-pharmacological approaches, and behavior and lifestyle changes. Such an approach has been shown to be beneficial in other chronic illnesses such as fibromyalgia, chronic fatigue syndrome, and post-Lyme disease.

Keywords

Integrative medicine, integrative health, complementary and alternative medicine (CAM), long COVID, post-COVID, COVID, immune, diet, exercise, mindfulness, stress reduction, chronic fatigue syndrome

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Introduction

The advent of the COVID-19 pandemic in December 2019 has, no doubt, changed the world forever. As of late August 2021, there were 215 million confirmed cases, including 4.5 million deaths.[1] As the crisis wanes in parts of the world, the far-reaching health and economic consequences that will last long after the majority of the world has been vaccinated are becoming clearer. Shortly after the start of the pandemic, medical professionals around the world began reporting on patients who had recovered from COVID-19 and yet continued to exhibit a variety of symptoms, even those who were initially asymptomatic with the virus.[2,3] Since it has been less than two years since the pandemic began, it is difficult to know how long these symptoms last, although media reports and medical research suggest months or longer.[4] There is no official name for this syndrome. Depending on the source, it is called long COVID, post-acute COVID, chronic COVID, long-haul COVID, late sequelae, and others. It is generally ascribed to individuals experiencing negative health effects 4 weeks after COVID infection.[5]

Since there is no known cause or even name of this syndrome, behavioral, lifestyle, and integrative approaches may have much to offer in healing people with these symptoms. For example, one such patient was a 44-year-old male. He presented to the clinic 7 months after mild COVID-19 infection. He had pre-existing type 2 diabetes, complained of daily headache, fatigue with excessive daytime sleepiness, and brain fog. Although he had seen numerous specialists, including a neurologist, ophthalmologist, and otolaryngologist prior to presentation, his symptoms persisted. Exam and workup, including MRI, were negative. A sleep study revealed severe obstructive sleep apnea requiring CPAP. He was started on a trial of magnesium 500 mg PO daily for

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headaches. He also received education on sleep hygiene reinforced with a regular sleep schedule and deep breathing exercises and daily meditation. At 3-month follow-up, he reported improvement in all symptoms. Although he was still having daily headaches, their severity has decreased from a 9/10 to 2/10. He also reported 15 to 20 "good" days in the previous month compared to 2–3 good days 3 months before seeing the integrative physician.

Epidemiology

Between 10% and 30% of those infected with the SARS-CoV-19 virus are thought to be experiencing long-term symptoms. That translates to between 5.4 and 17.9 million globally; about 700 000 in the US.[6,7] The largest study of long COVID to date analyzed nearly 2 million patients with a history of COVID-19. Researchers found that 23.2% had at least one post-COVID condition 30 days or more after their initial diagnosis. Those with more severe COVID disease were more likely to experience symptoms (Table 1), as were those with pre-exiting health conditions, particularly obesity, hypertension, and mental health conditions. The most common symptoms were pain, respiratory difficulties, hyperlipidemia, malaise and fatigue, and hypertension, with symptom prevalence varying by age.[8] Yet another study of 312 patients, including 247 who home isolated, found 61% had persistent symptoms at 6 months, including 52% of home-isolated adults aged 16 to 30.[9]

More serious sequalae from COVID-19 infection includes conditions such as pulmonary fibrosis, myocarditis, new diabetes diagnoses, stroke and other cerebrovascular events, cardiac arrhythmia, hypercoagulability, encephalopathy, peripheral neuropathy, and liver and renal function abnormalities.[10,11] An international survey of 3762 post-COVID patients with illness lasting more than 28 days found a prevalence of 205 symptoms in 10 organ systems. Fatigue, post-exertional malaise, and cognitive dysfunction were the most commonly reported after 6 months.[12] While children have significantly lower rates of COVID-19 infection, they also exhibit long-term effects. In the UK, 12.9% of children ages 2 to 11 and 14.5% of those 12 to 16 diagnosed with COVID-19 still had symptoms 5 weeks after the initial infection.[13] In the US, more than 4000 children had been hospitalized with multisystem inflammatory syndrome by late August 2021, and 37 had died.[14] A survey of 177 patients with post-COVID symptoms found that 43% reported worse health-related quality of life compared with baseline and 8% reported negative effects on their activities of daily living.[4]

Table 1. Percent of Patients with Long COVID Syndrome by Disease Severity[8]

Severity	Percentage reporting long-term symptoms*
Hospitalized	50%
Symptomatic but not hospitalized	27.5%
Asymptomatic	19%

*28 days or more after initial COVID symptoms
FAIR Health. *A Detailed Study of Patients with Long-Haul COVID*. June 15, 2021.

Etiology

Why do we think integrative approaches should help this syndrome? While the exact etiology of long COVID remains unclear, there are several hypotheses, including:[15]

- A chronic low level of inflammation in the brain/heart/muscle/nerves.
- An autoimmune condition in which the body makes antibodies that attack the brain.
- Dysfunction of ACE2 receptors in the heart and lungs.
- Hypercoagulable state and endothelial dysfunction resulting in widespread thrombi and immune response dysregulation.
- Autonomic nervous system abnormalities leading to decreased blood flow to the brain. and,
- Undetectable reservoir of infectious or noninfectious virus that continue to trigger an immune response.

Integrative medicine often addresses these same underlying processes usually through safe non-drug and lifestyle approaches that may improve many of them simultaneously.

Long-Term Impact of Long COVID

Long COVID is expected to have a significant impact on health care systems and economies around the world. One survey of 3762 people from 56 countries with long COVID symptoms found that 45.2% required a reduced work schedule and 22.3% were unable to work because of their health.[12] One of the first economic analyses of long COVID estimated that COVID-related disability could be responsible for as much as a third of the overall COVID-19 health care burden around the globe.[16] In addition, the World Health Organization warned in early 2021 that long COVID could have "severe social, economic, health and occupational consequences."[17]

These effects, like the effects of the pandemic itself, disproportionately affect communities of color. In the US, for instance, Blacks were twice as likely as Whites to die from the virus; 2.9 times as likely to be hospitalized; and had an infection rate 1.1 times higher. Hispanic rates of infection were twice those of Whites, and Hispanics were 2.8 times more likely to be hospitalized and 2.3 times more likely to die from the virus. American Indian or Alaska Natives had an infection rate 1.6 times that of Whites and were 3.3 times more likely to be hospitalized and 2.4 times more likely to die.[18] These populations already face significant barriers to quality health and health care, are poorly insured, and must exist within a health care system fraught with systemic

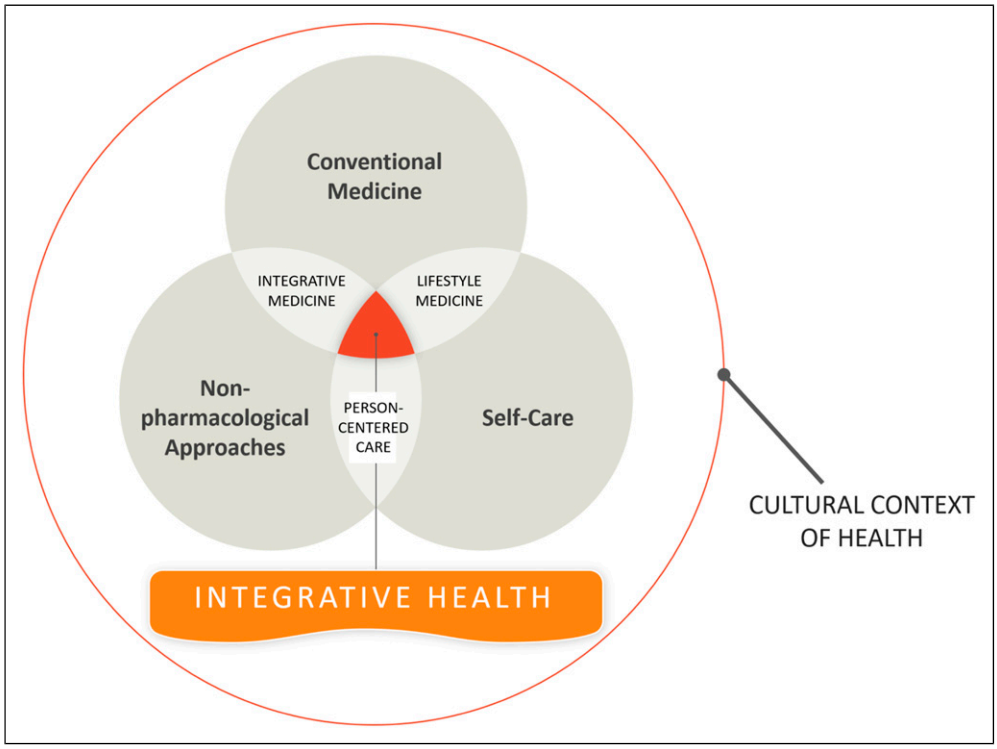

Figure 1. Integrative health.

racism.[19] They were also negatively affected by the social determinants of health prior to COVID, including lack of transportation and health insurance, food insecurity, and safety concerns, and often have uncertain work hours, which makes accessing the multispecialty care required for long COVID symptoms challenging.[20] In addition, disability affecting their ability to work may drive them further into poverty.[21]

Properly delivered and culturally sensitive integrative health care may address some of these barriers to good health care. Research suggests that Blacks will use many types of complementary and alternative medicine as a way to cope with the barriers they encounter in the US health care system.[22] In addition, integrative medicine emphasizes patient/clinician communication and a focus on the whole person, which provide an opportunity for a less judgmental, more inclusive experience for people and communities of color. However, several barriers exist, including awareness, availability, accessibility, and cost.[23]

Long Covid And Other Post-viral Illnesses

Post-viral illnesses such as long COVID are not uncommon. Reports of lingering effects from the 2003 SARS-CoV virus included persistent fatigue, diffuse myalgia, weakness, depression, and nonrestorative sleep with associated REM-related apneas/hypopneas.[24] In addition, a study of 117 Canadian SARS survivors followed for a year after they were discharged from the hospital found that 60% reported extreme fatigue at 12 months coupled with sleeping difficulties, while a 4-year follow-up of 233 SARS survivors in Hong Kong found that 27.1% met the diagnostic criteria for myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS).[25,26] Long-term effects were also seen with the Middle East respiratory syndrome (MERS) outbreak of 2012.[27,28] There are even reports of long-term extreme fatigue in survivors of the 1918–1919 Spanish influenza pandemic.[29]

Taking an Integrative Approach to Long COVID

Whatever the cause of long COVID turns out to be, it is clearly impacting people in multiple ways, including their physical, mental, and behavioral health, as well as social and spiritual dimensions. Thus, it requires a whole person approach and a multidisciplinary team of providers to appropriately manage it. To cope with the influx of long COVID patients, health systems around the world have opened multispecialty clinics to care for them, with an estimated 60 alone in the US.[21] This includes Jamaica Hospital Medical Center in Queens, New York, a 404-bed facility that serves one of the most culturally diverse populations in the country, primarily Black and Hispanic, with a significant number of immigrants, many undocumented. Most of the 1.2 million patients the hospital serves each year are uninsured or underinsured with little access to quality health care. In March of 2020, Queens became the epicenter of the pandemic in the US, with the entire hospital and one of its two ambulatory care centers devoted to COVID patients. The hospital was in the midst of opening an

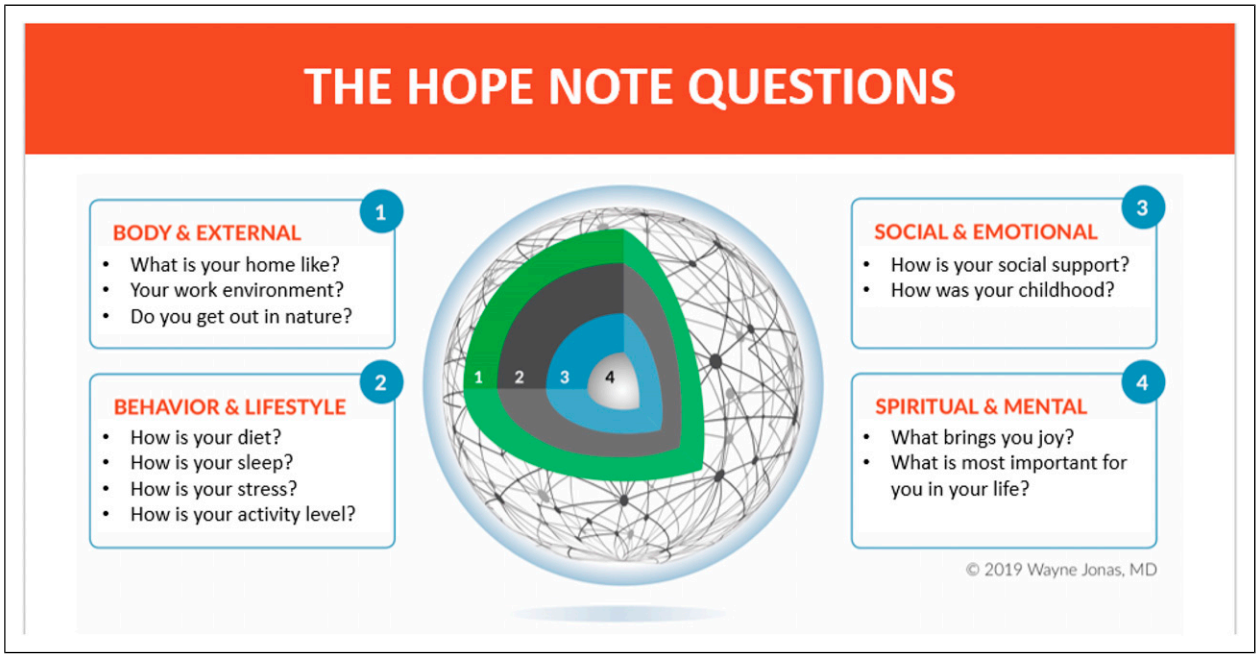

Figure 2. The HOPE Note.

integrative health clinic when the pandemic hit. After the COVID surge subsided in the summer and they began seeing "recovered" patients presenting with a myriad of symptoms, they pivoted to creating a long COVID integrative health clinic. Figure 1 highlights the framework they used to define integrated health.

Integrative approaches can be effective when used in other conditions that do not have clear and specific curative options, such as chronic fatigue syndrome, fibromyalgia, chronic pain, and post-treatment Lyme disease syndrome. Exercise for depression, mindfulness for stress and anxiety management, and an anti-inflammatory diet to reduce the inflammation that often underlies many chronic conditions are often more effective than pharmacologic therapy. Indeed, patients with such conditions often lose faith in traditional medicine and turn to complementary and alternative medicine.[30] Most patients come to the clinic after numerous visits with other health care providers and have seen no or minimal improvement. Instead, their symptoms are often blamed on stress and the trauma of the COVID experience. Yet, few of these patients were hospitalized with severe disease.

At the Jamaica clinic, these patients see an interdisciplinary team composed of a primary care physician, pulmonologist, mental health provider, and other specialists. The team uses a combination of symptomatic management and self-care to help patients recover, combining conventional medicine with an individualized integrative health care plan based on the patient's symptoms, life goals, medical needs, and lifestyles. Patients first receive an assessment from a primary care physician that incorporates the use of the HOPE Note (Healing Oriented Practices and Environments) to provide a more holistic evaluation (Figure 2). The HOPE Note is a patient-guided process designed to identify the values and goals in the patient's life and review their personal determinants of healing. It addresses physical, behavioral, psychosocial, and spiritual components. Working through the questions with the patient engages them in shared decision-making about their health and healing, identifying their life goals and putting them front and center in the care plan. Patients also receive any physical assessments, including imaging, pulmonary, and lab tests, their symptoms warrant, as well as a mental health screen. Treatment plans are based not just on the patient's symptoms, but on an overall approach to healing. That includes an anti-inflammatory diet and a mindfulness plan, such as yoga, journaling, meditation, guided imagery, and breathing exercises, as well physical exercise. The breathing exercises not only help with anxiety and stress, but can improve the breathlessness post-COVID patients often feel, particularly those who were left with pulmonary fibrosis.[31]

Two other examples of this approach illustrate the integrative health approach to long COVID.

The first is a 48-year-old female who presented to the clinic 9 months after mild COVID-19 infection with lingering symptoms of worsening migraine headache, non-exertional shortness of breath (SOB) without wheezing, episodic chest pain and palpitations, frequent panic attacks, and fatigue. She had a medical history of controlled mild intermittent asthma, hypertension, migraine, and a history of right carotid artery dissection 10 years ago. She was taking metoprolol. Prior to infection, she worked in a highly competitive job, traveled internationally, as well as physical exercise at least 30 minutes a day, 6 times a week. Her primary care physician recommended albuterol for her SOB; ibuprofen as needed for

her migraine headache; and alprazolam for anxiety. Exam and routine lab work were unremarkable. Patient underwent further cardiac and pulmonary testing. Pulmonary function tests were within normal limits with no significant response to a bronchodilator. A Holter monitor showed no arrhythmia, and she was negative for any structural heart disorders based on an echocardiogram.

The patient started on fluticasone BID and amitriptyline 10 mg PO daily for migraine and a lower metoprolol dose. She underwent a trial of escitalopram for anxiety and was referred for psychotherapy. She was also prescribed breathing meditation 5 minutes daily and walking 30 minutes daily. At 1-month follow-up, she reported improvement in daily symptoms and that her SOB and palpitations had resolved. She reported only needing the albuterol inhaler once every week vs 3 times daily. Her episodic headache and fatigue both improved. She was not able to tolerate escitalopram due to drowsiness, so was advised to increase deep breathing meditation with yoga to 10 minutes a day.

The second example was a patient seen 7 months post-COVID. She presented with lingering symptoms of anosmia and dysgeusia, loss of appetite with 20 pounds unintentional weight loss, joint pain, brain fog, and extreme fatigue. Physical exam and basic lab work, including a rheumatology workup, were normal. She also reported symptoms of excessive daytime sleepiness and snoring at night. A sleep study found severe Obstructive Sleep Apnea requiring CPAP. She was started on meloxicam 15 mg PO daily and turmeric 2000 mg daily for joint pain. We also prescribed a 30-minute daily walk and high-calorie meal plan and provided assistance with meal planning. At 3 months, she reported her symptoms were gradually improving. She stopped losing weight and, while she still experienced intermittent fatigue and cognitive deficits, they are less frequent.

Conclusion

Long COVID is challenge for millions of patients and to growing burden on global health care systems. Many COVID survivors struggle with multiple symptoms, increased disability, reduced function and poor quality of life. To help them, we must provide a comprehensive and coordinated approach to their management. Integrative health is a whole person approach for patients. It has the potential to improve the health and reduce the symptoms of those with long COVID. Thus, it should become a core area for research and delivery for patients with persistent post-COVID problems.

The questions in Figure 2 are used to guide the conversation with the patient during the HOPE consultation. Other questions can be added and personalized for each patient based on their personality, readiness to change, and circumstances. Additionally, a social determinant of health questionnaire is used as needed.

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