

Literature Review

A Multidisciplinary Rehabilitation Approach to Chronic Pain Patients in the Post-COVID-19 Era

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Background: The global health care system has been shaken by the unprecedented pandemic. Chronic pain management has suffered through the pandemic due to lack of access and challenges in care delivery only to be faced by a new set of chronic pain conditions resulting from prolonged and persistent COVID-19 symptoms referred to as “long COVID syndrome.”

Objectives: Long COVID is emerging as a complex and debilitating condition that occurs in a subpopulation of patients following acute COVID-19 infection. Our goals were to explore how to best treat and manage long COVID syndrome based on current experience.

Methods: This is a perspective rather than a systematic review. It is based on the limited available literature and current clinical experience.

Results: Although a few pharmacological agents have been proposed to mitigate symptoms, none have emerged to provide meaningful, long-term pain relief. Long COVID is associated with numerous and diverse symptoms. Risk factors for developing long COVID subsequent to acute COVID-19 remain unknown. Due to the multidimensional impact of long COVID chronic pain, a structured interdisciplinary rehabilitation model has been proposed to relieve pain, restore function, and maximize quality of life.

Limitations: This is a perspective with an editorial point of view rather than a systematic literature study. Long COVID syndrome is a new condition, with which no clinicians have extensive experience. This is not a systematic review so there is no Preferred Reporting Items for Systematic reviews and Meta-Analyses diagram. This is not a clinical study so there was no need for institutional review board approvals.

Conclusions: Treatment goals for the postviral syndrome of long COVID are multifaceted. In addition to pain control, patients may have functional deficits, cognitive issues, mental health issues, and reduced quality of life. Thus, a structured interdisciplinary rehabilitation model seems most appropriate to manage long COVID.

Key words: Chronic pain, long COVID, pandemic, COVID-19, brain fog, fatigue, pain program, functional restoration, back pain, joint pain

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The pandemic, with its unprecedented lockdowns and restrictions, has challenged people dealing with pain, who are now further challenged by an enigmatic, prolonged, and surprisingly prevalent postviral syndrome known as “long COVID.” The acute and postviral forms of COVID-19 may further spark the emergence of a new and younger group of chronic pain patients. Despite the resilience demonstrated by chronic pain patients (1) and the creative innovations of

their clinicians in managing the issues of the pandemic (2), long COVID may pose a serious challenge for the health care system and the ongoing care of chronic pain patients.

OBJECTIVES

Long COVID poses numerous challenges. It occurs in a subset of patients who experienced acute COVID-19 infection, has diverse clinical presentations, is of

variable duration and severity, and due to its novelty, has not been well studied. Nevertheless, it clearly is a distressing and potentially debilitating condition that is not infrequently associated with pain. Based on the existing literature and clinical experience, this perspective editorial presents ideas as to how to best treat and manage long COVID patients.

METHODS

The literature on long COVID is growing but remains limited, particularly in comparison to the literature on COVID-19, and there are gaps in our understanding as to the nature, trajectory, risk factors, and pathophysiology of this postviral syndrome. Many pain physicians have encountered patients reporting these postviral symptoms. We searched the literature using PubMed and Google Scholar databases and also supplemented these findings with the clinical experience of the author. This is a perspective on long COVID rather than a systematic review or narrative review.

RESULTS

Understanding Long COVID

While the global health care system still lacks an expert consensus definition or diagnostic tests for long COVID, it is generally recognized as a protracted postviral syndrome in which symptoms either persist or recur a month or more after the acute infection (3). These symptoms are not necessarily the same as those of the acute infection and the severity of long COVID is not associated with the severity of the original infection (4,5). A cohort of 177 COVID-19 survivors reported experiencing symptoms up to 9 months after the acute infection and, of this group, 30% described these symptoms as persistent (5). A meta-analysis of 55 studies (n = 47,910 COVID-19 patients) reported that 80% experienced at least one of numerous long-term symptoms (6), and one in five Americans has a current health condition that may be related to a prior COVID-19 infection (7). As long COVID is elucidated, erroneous notions have been increasingly put to rest (Table 1).

Epidemiology of Chronic Pain Post-COVID-19

Since much of the incidence and prevalence data about long COVID rely on self-reported patient experiences, prevalence estimates for long COVID diverge and range from 43% (10) to 80% (6). Emerging data indicate that long COVID occurs more often in younger

patients, women, and those with preexisting conditions (4,11,12). Although long COVID may occur even in individuals with mild cases of acute COVID-19, it is more prevalent among those with abnormal laboratory values of elevated D-dimer scores, C-reactive protein levels, interleukin-6 counts, as well as the ones hospitalized with the infection (54% vs 43% among nonhospitalized) (10,13). Although pediatric studies are few, long COVID may occur in up to 1% of pediatric COVID-19 patients as well (14). These high prevalence statistics combined with approximately 470 million COVID-19 survivors worldwide define an enormous population (10).

The global population of chronic pain patients has clearly been affected by COVID-19 and its aftermath in multiple ways and ways that differ from the nonchronic pain population. For chronic pain patients, the pandemic and lockdowns limited or even blocked access to in-clinic treatments and migrated their care to telehealth options. A survey of 17 pain clinics in Canada found that every one of them had to reduce or even cease offering in-clinic care to patients (15). The COVID-19 pandemic fueled considerable anxiety about the nature and lethality of this novel virus, the indeterminate length of lockdowns, and confusion about mitigation strategies. While the pandemic may not have significantly exacerbated chronic pain intensity overall, it worsened pain catastrophizing and imposed novel stressors and uncertainties, while simultaneously limiting access to care (1). On the other hand, the Pan-Canadian Study (16) evaluated 3,159 chronic pain patients in April-May 2020 and found most respondents (68.9%) reported their pain had gotten worse during the COVID-19 epidemic with 43.2% reporting psychological stresses as well. Factors that exacerbated chronic pain during the pandemic were listed as stress, pandemic-mediated changes in pharmacologic treatments, and being employed when the pandemic started (16). Changes in pharmacological therapy were reported as an exacerbating factor for chronic pain, regardless of whether these changes were due to changes in symptoms or lack of access to prescribers or clinics (17).

It appears based on modest evidence that individuals with preexisting conditions, such as chronic pain syndromes, are at elevated risk for developing long COVID (18). Comorbidities that are thought to increase the likelihood of long COVID, such as obesity and hypothyroidism, occur frequently in the chronic pain population (19,20).

Long COVID Symptoms

Long COVID symptoms overlap with the symptoms of many chronic painful conditions, such as myalgia, arthralgia, headache, fatigue, gastrointestinal problems, disrupted or disordered sleep, and mood disorders (21-23). Indeed, long COVID has dozens of associated symptoms (4,22). Using a retrospective matched cohort design, electronic health records of approximately 63.4 million Americans from all 50 states were assessed (7). Included as case patients were those with a positive COVID-19 test from an inpatient, outpatient, or emergency setting; control patients were those who had a clinical encounter of the same type in the same month but who did not test positive for COVID-19. Patients were followed 30 to 365 days after the index encounter until the first incidence condition occurred or the study period ended. Thirty-eight percent of case patients and 16% of controls experienced at least one condition; there was an absolute risk difference between the proportion of cases vs control patients of 20.8 percentage points for those between the ages of 18 and 64 years and 26.9 percentage points for those ≥ 65 (7). The most commonly reported incident conditions were respiratory problems and musculoskeletal pain (7). Prominent among the many symptoms attributed to long COVID are: persistent fatigue, anosmia, orthostatic intolerance, dyspnea, cough, brain fog, headache, mood alterations, disturbed sleep, musculoskeletal pain, chest pain, heart palpitations, gastrointestinal symptoms, postexertion malaise, rash, menstrual changes, testicular pain, kidney failure, cardiovascular conditions, respiratory disease, blood clots, vascular problems, and hair loss (4,6,7,22-27). Furthermore, acute COVID-19 infection can target the peripheral and/or central nervous systems and cause long-lasting neuropathic symptoms (27-29). From a study of the symptoms exhibited by long COVID patients, 3 symptomatic clusters emerged (Table 2).

The Impact of Long COVID on Chronic Pain Patients

Chronic pain involves the complex and multidirectional interactions between physiologic symptoms, psychological factors, and social context; chronic pain syndromes may be further colored by culture, socioeconomic status, spiritual beliefs and practices, and overall health (30). Psychological well-being, confidence in care, social or familial networks, and daily routines can also confer benefits on chronic pain patients; by contrast, the uncertainties and isolation brought on by the pandemic fueled concern and even despair, particularly

Table 1. *Long COVID is increasingly recognized as a prevalent and persistent postviral syndrome that has the potential to affect millions of COVID-19 survivors worldwide. Growing understanding of long COVID has undermined certain previously held popular beliefs (8,9).*

Popularly Held Notions	Now Known
Long COVID is prolonged COVID-19; people have more or less the same symptoms.	The symptoms of long COVID may or may not mirror the symptoms of the acute infection; some long COVID symptoms may be new.
Only people with severe cases of COVID-19 develop long COVID.	While there appears to be a greater risk of long COVID among those hospitalized for COVID-19, long COVID can occur following mild acute infection.
People who had severe cases of acute COVID-19 are at risk for severe long COVID.	There does not seem to be any correlation in the severity of the acute infection and the severity of the postviral syndrome.
Men are more likely to get long COVID than women.	While men are more at risk to contract acute COVID-19, women are more likely to develop long COVID.
The symptoms of long COVID seem random.	Obese individuals who develop long COVID are at elevated risk particularly for myalgia and fatigue.
Long COVID can cause somatic symptoms.	Many somatic symptoms associated with long COVID may be attributable to the distressing and disrupting effects of a global pandemic, medical insecurity, and lockdowns rather than the pathogen itself.

Table 2. *Three symptomatic constellations in long COVID have emerged with women significantly more likely to report Cluster A than men, P < 0.001 (8).*

Cluster A	Cluster B	Cluster C
Myalgia	Low Mood	Impaired Memory
Fatigue	Anxiety	Attention Deficit
	Sleep Disorders	Cognitive Problems

among patients who felt disconnected from their pain care clinical team (31). Chronic pain patients who had incorporated regular exercise into their routines were abruptly forced to quit these programs as well as occupational or physical therapy, while having minimal to no access to medications, interventional treatments, or even psychological support. The result is that many chronic pain patients lost ground in terms of fitness and became more sedentary. Likewise, chronic pain patients dealing with comorbid depression or anxiety may have experienced heightened symptoms during the pandemic with its many restrictions.

A great clinical challenge is that neurological sequelae of COVID-19 are both prevalent and diverse. In a meta-analysis (32) involving 62,382 patients, 19 studies identified stress as the most prevalent mental health consequence (48.1%) of the COVID-19 pandemic, followed by depression (26.9%), and anxiety (21.8%). Mental health conditions are likely underreported symptoms of long COVID and range from anxiety and depression to posttraumatic stress disorder (32,33). In a study (34) of 777 German school children (9 to 17 years), 4.6% developed new-onset chronic pain during the pandemic, which investigators found was associated with depression, anxiety, and decreased quality of life. Chronic pain patients with acute COVID-19 report greater chronic pain intensity during the infection than before or afterward (35,36). Since COVID-19 is associated with heightened and even extreme inflammatory responses, exacerbated musculoskeletal pain can result (37,38). Pain is commonly reported during acute COVID-19, particularly headaches and pain in the limbs (38-40). A multicenter cohort study (41) found that patients who are infected with COVID-19 with a previous history of musculoskeletal pain exhibit a higher risk of developing long-term post-COVID-19 pain symptoms.

Postviral pain syndromes are well known in medicine and include those associated with chikungunya (42) and varicella zoster (43,44). Patients hospitalized in intensive care may develop a post-intensive care unit (ICU) syndrome of anxiety and chronic painful symptoms; in fact, pain prevalence following ICU hospitalization for any reason ranges from 14% to 77% and may persist for years after discharge (45). A United Kingdom Biobank cohort study (46) of 441,403 patients demonstrated that chronic pain is associated with COVID-19 hospitalization. This study postulates that pain may be a proxy measure of underlying disease processes (46).

Treatment Considerations

Since long COVID patients have different and multiple symptoms, there is no single course of treatment that will be effective in most patients (47). A variety of pharmacologic options may be deployed for treating long COVID and some of the medications used to treat acute COVID-19 may be effective in this setting as well. These include monoclonal antibodies, antiviral therapy, corticosteroids, anti-inflammatory agents, and a variety of disease-modifying novel agents that emerged during the peak of the pandemic as alternative solutions (48-51).

Painful symptoms can reduce or preclude patients from rehabilitation efforts (52). Complications from the

acute illness can metamorphize into persistent painful conditions (52). Critical illness of any kind can result in protracted periods of disordered sleep of a year or longer (53). Chronic pain can be directly associated with poor sleep and may start a vicious cycle where poor sleep drives painful symptoms, which then impede restorative sleep (54). Sleep disturbance and poor sleep quality have been shown to be prevalent in patients with long COVID (55,56). While sleep is not necessarily considered a typical symptom of chronic pain, it may be important to consider sleep quality when weighing treatment options for long COVID patients with chronic pain.

The neurological symptoms associated with long COVID may be among the most challenging to treat. Patients with acute COVID-19 infection have reported a range of neurological symptoms, from cognitive impairment to encephalopathy to hypoxic brain injury, altered mental status, and even psychiatric disorders (57-59). Headache associated with a viral infection is a well-known and frequently reported disorder (60). In a study (60) of 130 acute COVID-19 patients visiting the emergency department, 24.7% reported severe headache with pulsating, migraine-like characteristics, and of patients followed at 6 weeks, 37.8% reported ongoing headache, half of whom had no prior history of cephalgia. While more study is needed, a post-COVID-19 headache may have different attributes than a pre-COVID-19 headache, such as being associated with dizziness or memory loss (61). Although the reasons for this are not clear, a case-control study (62) of migraineurs with long COVID found that migraines could be associated with fatigue as a symptom of long COVID, but not with long COVID headaches.

Thus, treatment considerations must take into account that symptoms of long COVID are numerous, diverse, and overlap with symptoms of chronic painful conditions or with other illnesses. Many studies (63,64) have established the presence of new-onset pain after infection with COVID-19. This new-onset pain can lead to chronic pain if not adequately studied and treated. Chronic pain patients who survived COVID-19 may find their chronic pain symptoms altered or exacerbated; among those with long COVID are also those with new-onset chronic pain. There is little experience with long COVID to help guide treatment choices.

Interdisciplinary Pain Rehabilitation Programs

While acute pain can often be effectively addressed in single-modality therapy, chronic pain and long CO-

VID are more appropriately managed with an interdisciplinary approach (65,66). Many long COVID patients require physical therapy, occupational therapy, or other forms of outpatient rehabilitation (66). Since their inception in the middle of last century at the University of Washington and the 12-week program nicknamed the “Swedish Back School,” outpatient rehabilitation programs for chronic pain have been successful in reducing pain intensity, restoring function, and enhancing quality of life (65). The Swedish Back School offered chronic low back pain (cLBP) outpatients exercise programs, new skills to improve function, biomechanical training, and ergometric advice under the close supervision of health care professionals (65). These interdisciplinary pain rehabilitation programs (IPRPs) emerged in the 1980s, and were recognized in guidelines for chronic pain patients in order to both manage pain and regain function (67). IPRPs merge physical components (e.g., exercise, physical therapy, occupational therapy) with biopsychosocial interventions and education (67). The scope and duration of the IPRPs vary among patients and can often accommodate employment schedules (68).

Among the health care professionals who may be included in an IPRP team are pain physicians, nurses, occupational therapists, physical therapists, pain and neuropsychologists, social workers, nutritionists, vocational rehabilitation providers, recreational therapists, and instructors in specific practices, such as yoga, meditation, or music therapy. Thus, the scope of an IPRP is wide enough to accommodate a holistic approach to the chronic pain patient with long COVID (65).

An important and sometimes overlooked aspect of an IPRP is diet and lifestyle interventions primarily aimed at reducing obesity (69). Obesity is a risk factor for both chronic pain and COVID-19 infection and is associated with numerous other potentially life-threatening conditions, such as diabetes mellitus and cardiovascular conditions (70). Integrating weight-loss efforts into an IPRP can reduce pain and educate patients on the role of adiposity in chronic pain along with meaningful lifestyle interventions to lose weight (71,72). There is considerable interest among some patients about nutritional supplements and over-the-counter products for pain control and immune support, but patients should be advised there is no compelling evidence for or against these treatments (9). While plant-based diets rich in polyphenols and antioxidants are healthful and may confer benefits to chronic pain patients, there is surprisingly little research on this important topic (73).

Interest in IPRPs is driven in part by the fact that conventional treatment for such widespread chronic painful conditions, such as cLBP, has failed to significantly improve function or reduce disability compared to IPRP-type interventions (74,75). Innovative IPRPs are typically multidisciplinary programs with temporal limits, such as 3 to 6 weeks, although some can be much longer (76,77). Even shorter-duration but intense programs, such as 6 hours a day, 5 days per week for 5 weeks can offer benefits durable over a year (78). Such IPRPs can show benefits in functional improvement, pain reduction, and better quality of life (68). Components of a long COVID IPRP for a chronic pain can be personalized for individual patients and may be expanded beyond manipulation, physical or occupational therapy, drug therapy, and exercise to include yoga, acupuncture, massage therapy, psychological counseling, educational efforts, meditation and mindfulness, coping skills, support groups, and other efforts (78,79).

Comprehensive IPRPs for neurological injury, such as stroke, have also been effective, and include exercise as well as training in posture, balance, and other skills. Interestingly, the severity of the impairment at baseline was not associated with poor outcomes, making IPRPs appropriate for a wide range of patients with neuropathic pain (80). However, IPRPs appear to be more effective when started early (77). Predictive factors for IPRP success in cases of cLBP are younger age when the back pain commenced, a prior history of exercise, and a shorter duration of absenteeism at baseline (81).

IPRPs can include many different components, and many factors outside the scope of conventional medical treatment have been shown to be effective for treating chronic pain patients. For example, resilience, an important aspect of rehabilitation, can be fostered with a strong social support system (82,83). Lifestyle modifications can make patients stronger and more resilient as they adapt to their condition (84). Psychological counseling may be needed for those with broken relationships and dysfunctional families (85,86). Educational interventions can equip patients with important new skills or help them regain lost function. Psychological interventions can encourage patients to contextualize their chronic pain in more helpful ways (87). The patient’s psychosocial profile and their own preferences using a shared decision-making model should be used to develop treatment plans (88). Despite the clear benefits of personalized and innovative IPRPs, they are not in widespread use, likely due to the fact that not all clinicians appreciate their benefits, they are complex to start and challenging to maintain, they

fall outside conventional clinical practice, and reimbursement may not be available (89).

Developing an Innovative Care Paradigm for Chronic Pain Patients with Long COVID

A holistic and personalized IPRP for a chronic pain patient with long COVID commences with a comprehensive assessment of the individual patient. A detailed patient history should be obtained with appropriate examinations, laboratory tests, and imaging. Since patients may not be cognizant of the extent and range of long COVID symptoms, the clinician should ask specific questions about myalgia, cephalgia, gastrointestinal problems, insomnia, depression, and other commonly reported long COVID symptoms, which the patient may not necessarily link to COVID-19. The various symptoms of long COVID can wax and wane, so patients and the clinical team must be mindful and alert to potentially new symptoms, exacerbations of older symptoms, and also the gradual resolution of some other symptoms. One of the challenges in treating long COVID in chronic pain patients is “hitting the moving target.” In the case of potentially serious health conditions or life-threatening mental health disorders, emergency referral may be appropriate.

IPRP treatments can be highly effective, but they place demands on the patients. Patients should be educated that an IPRP is a clinically supported but essentially self-managed program. An IPRP is not necessarily the optimal program for all patients, some of whom may be better suited for more limited pharmacological therapy due to advanced age, physical limitations, frailty, personal preferences, or mental health.

An effective IPRP is individualized for each patient. For chronic pain patients with limited mobility, special modifications may be necessary. Patients may vary in terms of how receptive they are to things like meditation, yoga, or acupuncture; these can be added or excluded as the patient prefers. In some cases, a strong psychological component is needed for the IPRP to manage issues, such as anxiety, depression, or catastrophizing (90). The clinician should use a shared decision-making model to work with the patient to develop an individualized program that accommodates the patient’s needs without being too overwhelming for the patient (91). It must be remembered that patients are likely unfamiliar with IPRPs and may regard some of their aspects as too difficult to manage.

Pharmacological therapy may still be appropriate for patients, but alternative pain-control methods, such as topical products, heat or cold therapy, and chi-

ropractic, may be introduced. In addition to the drug therapy described earlier, novel interventions, such as Botox injections for migraine management, vagal nerve stimulation, lidocaine infusions, and pulmonary rehabilitation, may also be appropriate (92-95). When pharmacologic therapy is used, a multimodal approach is preferred to treat different pain mechanisms and to reduce the total consumption of opioids, if opioids are used at all (17,96). An individualized approach, personalized to the needs of the specific patient, is warranted.

Goal setting for the IPRP can be both important and motivational, but clinicians and patients must recognize that objectives change with time, circumstances, symptomatology, and improvement (Table 3). In general, functional goals tend to be more meaningful to patients than lower scores on a Visual Analog Scale (97,98). For instance, a patient’s goal may be recovering the ability to do simple chores, or even return to work.

Clinical Challenges

Long COVID complaints raised by chronic pain patients should be taken seriously and assessed early, so that associated pain can be promptly and effectively treated. Since about a third of those with presumed long COVID will not seek care or do not recognize their symptoms as long COVID (99), uncovering the presence of long COVID in chronic pain patients may take some probing on the part of pain physicians. Many chronic pain symptoms overlap with those of long COVID, such as weakness, fatigue, and muscle pain. Of importance is that pain physicians gather and publish data as much as possible to help better understand the nature of this novel—and global—postviral syndrome.

Interdisciplinary approaches can be helpful to patients, but are expensive in terms of overall costs and the expenditure of health care time and resources (96). However, there may be important ways to build simple interdisciplinary programs that confer benefits to patients without being overly exorbitant. This may rely on technology (e.g., texts, Zoom calls, emails) and growing appreciation of the value of IPRPs. A committed multidisciplinary team provides the greatest resource for patients, and, as much as possible, the same team should stay with a patient throughout the rehabilitation course as continuity of care can be highly beneficial. The more intensive programs, such as those with over 100 contact hours, can be more effective than those with < 30 contact hours (100), but they also place more demands on the patients (65). The content and duration of the program should be customized to fit the patient’s individual needs and ad-

justed throughout to the patient's response. Therefore, for optimal effectiveness, appropriate patient-centric benchmarks and outcome-based goals need to be set at the very inception of the program, regularly tracked throughout the course of the treatment, and modified, as needed, over the course of the program. Thus, resource-effective IPRPs should be developed that confer benefits without being overly burdensome to patients, clinicians, or our health care system.

Tapping into local resources can also be beneficial in developing a comprehensive interdisciplinary team, such as the use of exercise programs or water exercises at local recreation centers, classes in yoga or meditation, chiropractic clinics, physical therapists, massage therapists, and others. When engaging others in these programs, it may be helpful to meet with them in advance and share the multidisciplinary approach to treating chronic pain patients with long COVID.

Limitations

This is a perspective and represents the opinions of the author. It is based on current literature and clinical experiences, but it is not a systematic literature review or clinical study. Long COVID is a new syndrome with which few clinicians have broad or deep experience.

CONCLUSIONS

The colossal damage caused by the pandemic was not limited to the number of lives lost or the worst economic recession since World War II, but must also include the ongoing pandemic of the postacute syndrome known as long COVID. The pandemic appears to have concluded, but clinicians and patients are still dealing with the brunt of long COVID. The COVID-19 pandemic has irrevocably changed modern health care and chronic pain management, both by introducing long COVID into the preexisting chronic pain patient population and possibly leading to the emergence of a new subset of the chronic pain population: new-onset chronic pain patients. One of the safest and most effective ways to manage chronic pain is the use of outpatient IPRPs, but these multidisciplinary and multimodal efforts place new and different demands on pain physicians and patients, who are asked to self-manage much of their own recovery efforts. An IPRP can be challenging to initiate and maintain, but they are likely to be effective in reducing pain, improving function, decreasing disability, and enhancing quality of life. Outpatient IPRPs can be helpful for caring for the large current population of chronic pain patients, the new chronic pain patients whose pain

Table 3. *Developing a care plan and IPRP for a chronic pain patient dealing with long COVID.*

Tactic	Considerations
Use a shared decision-making paradigm.	Patients can better self-manage a program they help design.
Set functional goals first.	Goals should be periodically revisited as they can change; nonfunctional goals can be relevant as well.
Assess pain and function regularly.	Tracking progress can be motivational.
Build a comprehensive referral network.	Different patients will have different needs.
Develop robust communication strategies for the interdisciplinary IPRP clinical team.	Daily or weekly team discussion to discuss patient progress may be essential.
When possible, address comorbidities, such as obesity.	Weight-loss and nutrition programs can be important, but are often overlooked in an IPRP.
Provide patient with alternative tools to manage pain.	Educate and inform them about the use of acupuncture, yoga, topical medications, chiropractic, massage therapy, mindfulness-based therapies, and other things that may help them manage pain.
Assess mental health and address even "small" concerns.	Depression is often comorbid with chronic pain and can derail IPRP efforts.
Check in regularly with the patient.	Although IPRPs are self-managed programs, regular consultations with the clinicians can be motivational and assure that the IPRP is adjusted, as needed, as the patient's condition improves or changes.
There may be no going back to "normal."	Chronic pain patients deserve professional compassion as they navigate long COVID and adjust to their new baseline.
Promote resilience.	Family support and strong social networks can be crucial for resiliency in patients for long-term benefits.
Think outside the box.	Creating a strong wraparound IPRP may involve some novel approaches in addition to clinical programs: psychological support in form of cognitive behavioral therapy, mindfulness-based meditation, expressive art therapy, dietary interventions, physical rehabilitation, vocational training, social support, etc.

Abbreviation: IPRP, interdisciplinary pain rehabilitation program.

started in the pandemic, and the many chronic pain patients whose pain and pain care were altered and possibly exacerbated by the pandemic.

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