

Background/Significance

Neuropsychiatric symptoms are a hallmark of long-COVID syndrome. Common neuropsychiatric symptoms include anxiety, depression, and post-traumatic stress, fatigue, muscle weakness, insomnia, myalgia, neuropathic pain, headache, memory loss, brain fog, executive functioning deficit, ageusia, and anosmia. Long-COVID is not well recognized by the medical community, and treatment options are scarce. This poster explores a working model for a psychiatric consultation clinic for long-COVID. We illustrate a case of long-COVID syndrome. Finally, we demonstrate effective alleviation of symptoms using a tricyclic antidepressant (TCA) and present other anecdotal evidence of purposed treatment modalities.

Case Presentation

A 55-year-old female with no psychiatric history, presented to the long-COVID primary care clinic for evaluation. The patient developed an acute COVID-19 infection in July 2022 with headaches and a high fever. A month following her acute infection, she developed numbness, tingling, burning sensations, muscle twitches, a 'vibrating sensation', tinnitus, insomnia, panic attacks, crying spells, and a worsening mood. She became somatically preoccupied with her symptoms. She was initially referred to a neurology clinic and underwent medical work-up including blood work, an electromyograph, nerve conduction studies, and a skin biopsy for small fiber neuropathy, all of which were negative. She was tried on psychotropic medications, including alprazolam and clonazepam as needed, duloxetine, buspirone, and escitalopram, all of which failed to provide relief from symptoms. She was referred for consultation from the psychiatric long-COVID clinic and started on amitriptyline. At a dose of 30mg, she experienced relief of all symptoms. She remained on amitriptyline for 2 years and then was slowly tapered off without return of symptoms.

Results

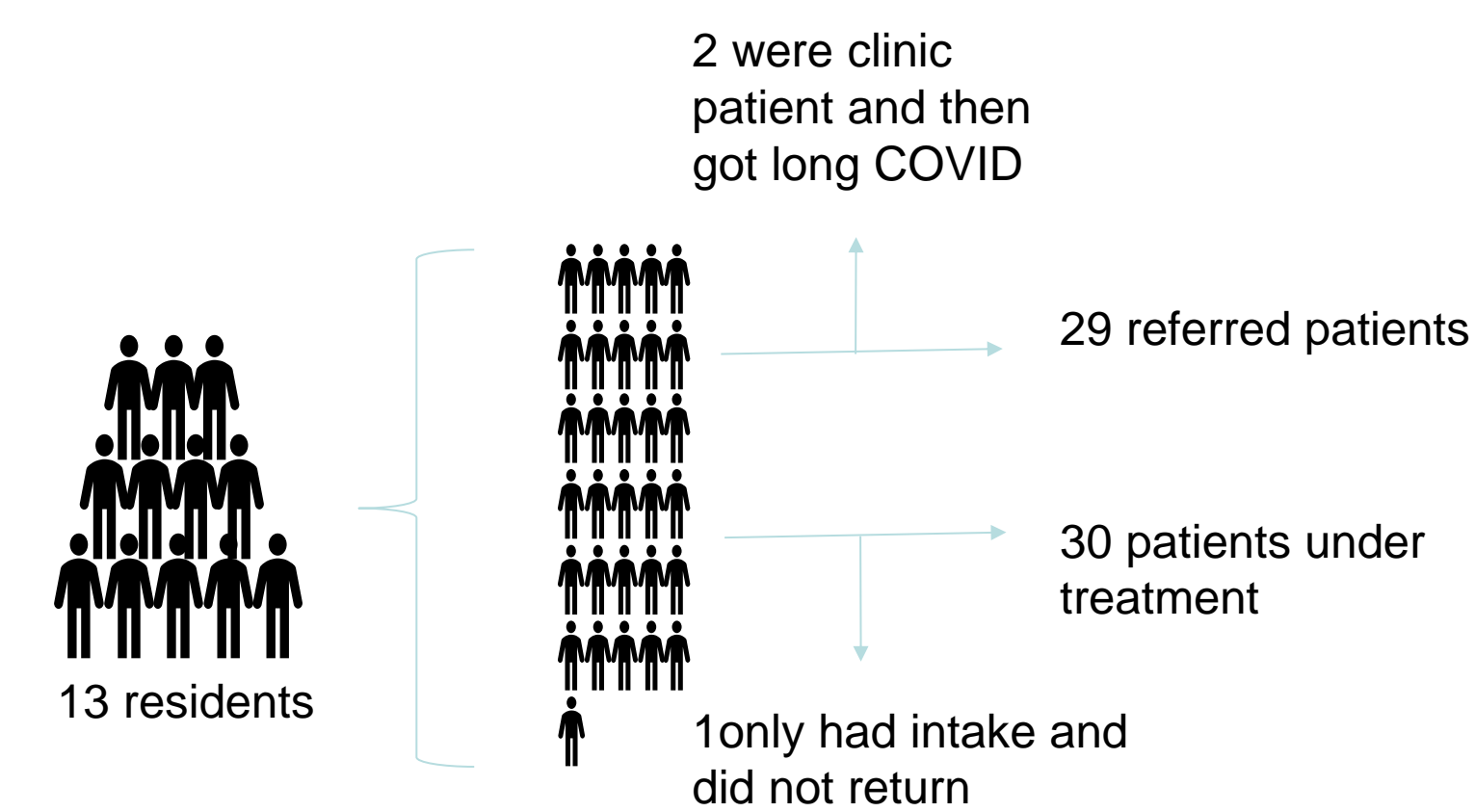
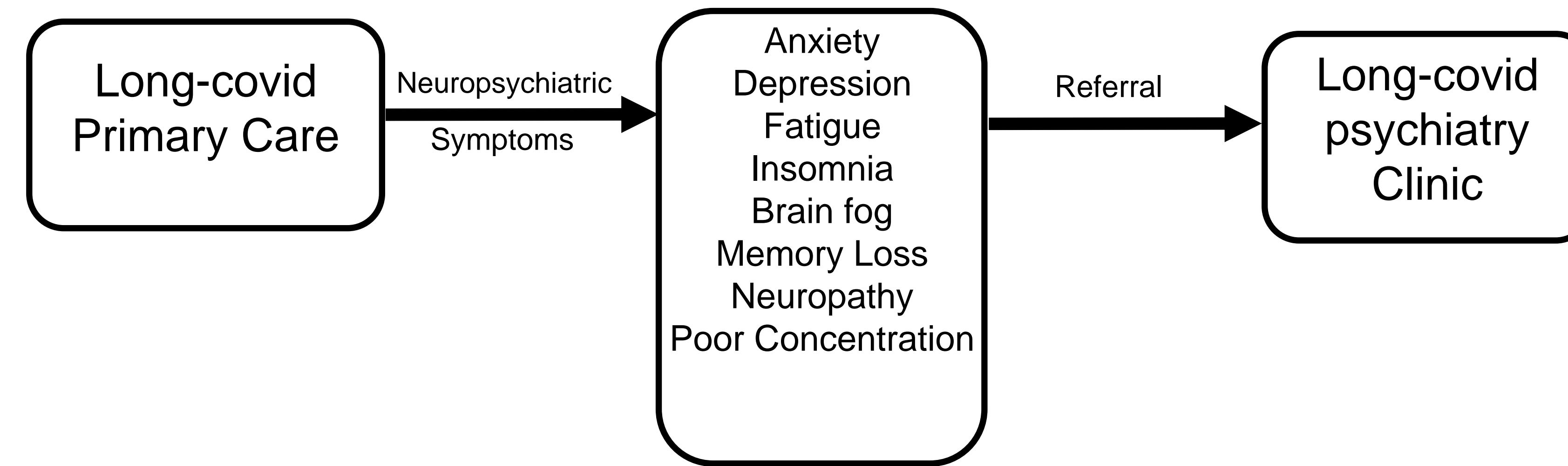


Figure 1. Number of patient's seen in the Long-covid psychiatry clinic.

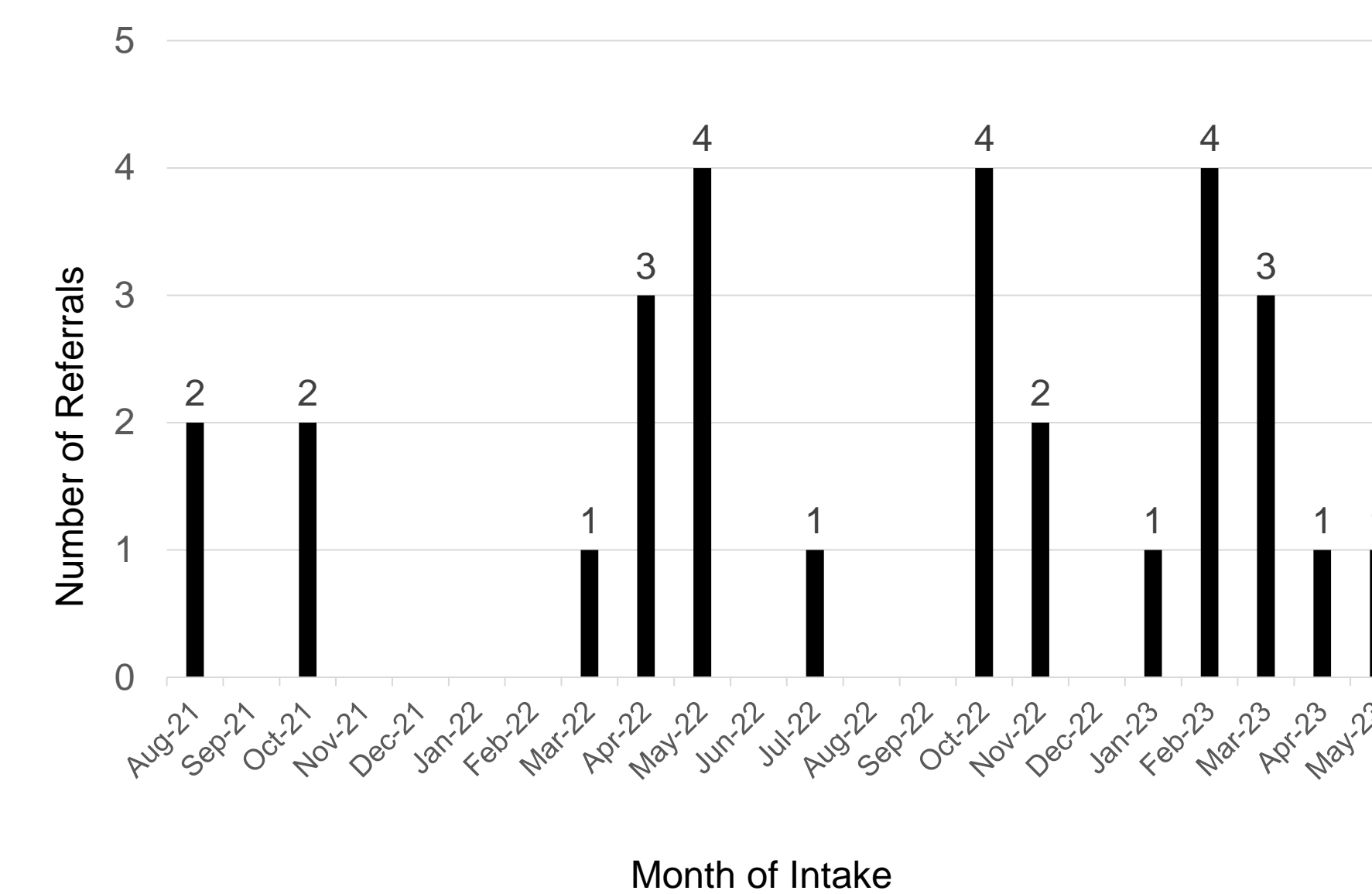


Figure 2. Number of referrals to the clinic and month of psychiatric intake.

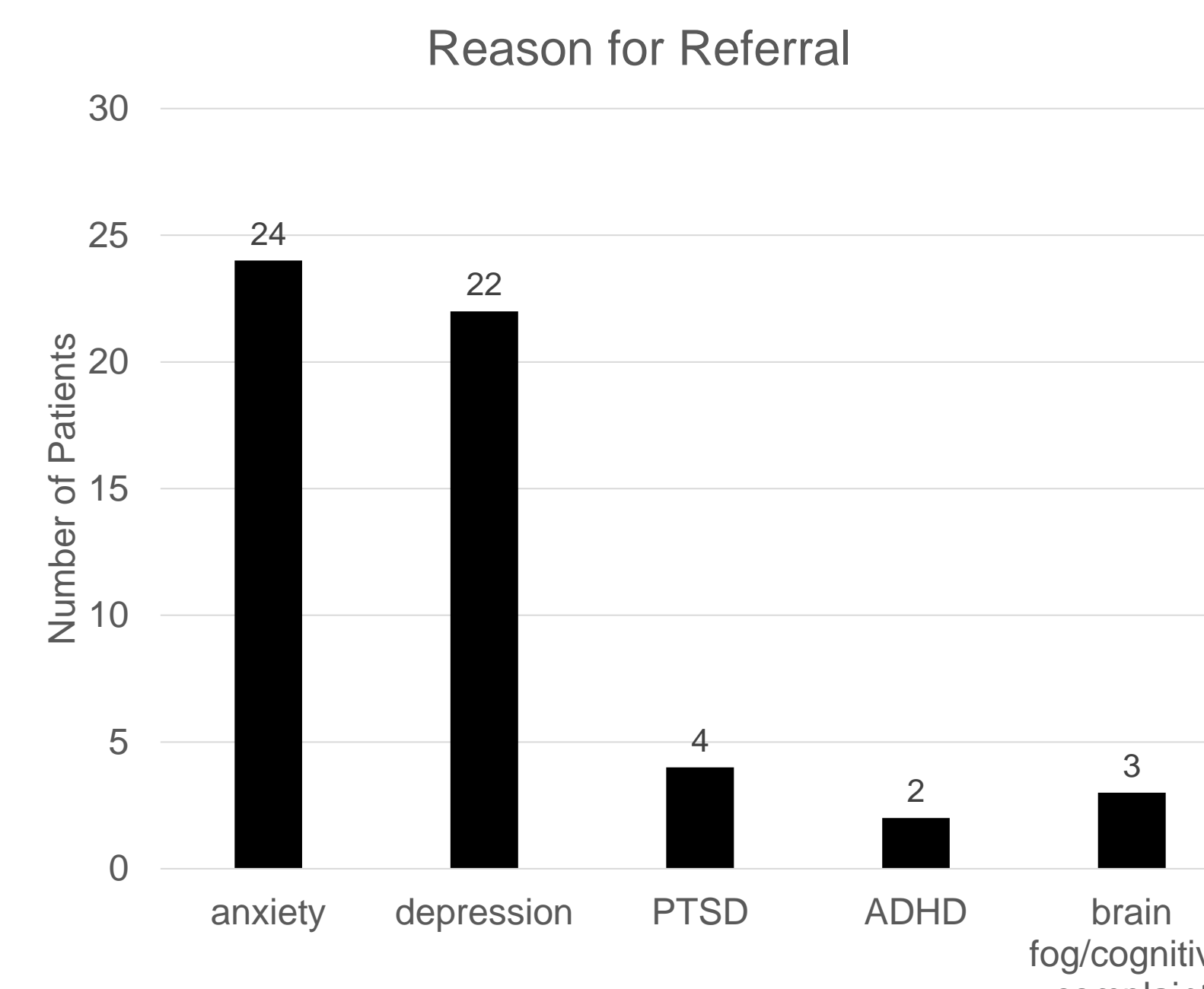


Figure 3. Psychiatric symptoms prompting the referral.

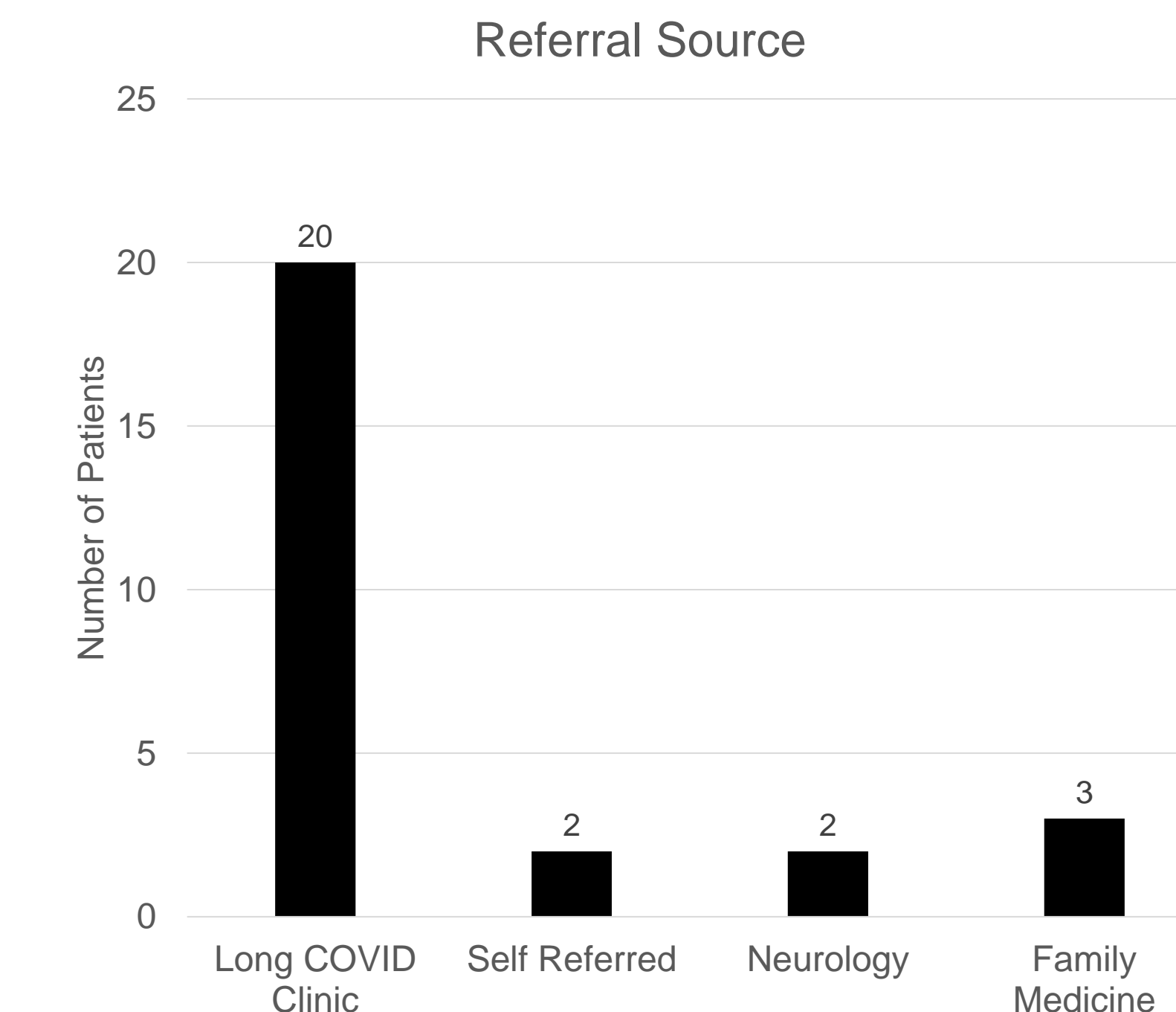


Figure 4. Number of patients by referral source.

Results Continued

Psychopharmacological Treatment			
Agent	Dosing Range	Targeted Symptoms	Hypothesized Mechanism of Action
Bupropion	150-450 mg Extended release	Brain fog, low mood, memory impairment, fatigue, poor concentration	The dopamine and norepinephrine reuptake inhibitor is known to have effects on the brain that may treat symptoms of brain fog including blocking hippocampal cell loss, increased neural activity in the cingulate cortex, and decreasing proinflammatory cytokines
Tricyclic Antidepressants	Amitriptyline 10-75 mg Nortriptyline 100-125 mg	Headaches, neuropathy, Anxiety, insomnia, Depression, myalgias, joint pain	tricyclic antidepressants (TCAs) may be useful in treating such symptoms given their anti-inflammatory properties and CNS penetrance.
Modafinil	100-400 mg	Brain fog, poor concentration, fatigue	A dopamine reuptake inhibitor, is US Food and Drug Administration-approved for reducing drowsiness in patients with sleep disorders and has been used off label to improve concentration and reduce fatigue in various disorders.
Naltrexone	1-4.5 mg	Fatigue, brain fog, pain	Naltrexone exhibits immunomodulatory properties and has been found to be effective in various autoimmune diseases.

All agents and their respective dosages are used daily
Table 1. Proposed pharmacological agents for treatment of long-covid neuropsychiatric sequelae.

CONCLUSION

Treatment of long-COVID requires a multidisciplinary approach, in which consultation-liaison psychiatry plays an integral role. Given the various neurological and psychiatric manifestations of long-COVID, it is becoming increasingly important for consultation psychiatrists to identify and treat this syndrome. Previously, we published anecdotal evidence of several pharmacological agents that are effective in alleviating the symptoms of long-COVID. Of these agents, TCAs show very promising results.