

# A Shift in Approach: Assessment and Treatment of Adults With Functional Neurological Disorder

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# Abstract

Functional neurological disorder (FND) is a complex condition involving an interaction of psychological, physiological, and social factors. Despite high utilization of medical services, people with FND often suffer from poor long-term health and psychosocial outcomes, and experience stigmatization and marginalization within the medical community. Health service psychologists are well positioned to help patients with FND through the lens of the biopsychosocial model of health. Psychologists can facilitate appropriate assessment and treatment, and advocate for the needs of patients diagnosed with FND within multidisciplinary teams. This article reviews best practices for assessment and treatment of individuals diagnosed with or suspected of having FND and presents some clinical and ethical challenges associated with this complex population.

Keywords Functional neurological disorder · Conversion disorder · Psychogenic

# **Case Vignette**

Sarah Waters is a music teacher in her 30s who recently returned to full-time in-person work following a long period of unemployment due to the COVID-19 pandemic. One day, while at work, her legs gave out and she collapsed to the floor in front of her students. She was taken to the emergency room and admitted for workup.

On interview, she reported a four-month history of progressive leg weakness, tremors, and fatigue that was interfering with her daily functioning. She underwent extensive diagnostic testing including spine and brain MRI and bloodwork for toxin exposure. Results revealed a minor disc bulge but were otherwise unremarkable. Neurology was consulted and physical examination demonstrated that tremors were distractible and "give way" leg weakness was intermittent and inconsistent with known disease. The neurologist described her symptoms as having "functional overlay" and told Sarah her symptoms were caused by stress. She was told to rest for several days and she was discharged from the hospital with a referral for psychological evaluation.

Several weeks later, Sarah arrived at her psychology appointment in a wheelchair and appeared frustrated stating, "they think it's all in my head." She described hesitancy to engage with psychology given she did not perceive herself as having any psychological difficulties or stress. In fact, she could not link any stressor to the onset of her symptoms, except for a minor gastrointestinal illness that preceded the onset of leg weakness by a few days. She stated, "the doctors told me this was caused by stress, but my only stress is related to these symptoms! I just want to walk again." She described ongoing worry about whether her condition was progressive, and how it would affect her ability to teach and to financially support herself. She was guarded about seeing a psychologist and wondered how it would be helpful to her in this predicament.

# **Background and Challenges**

Functional neurological disorder (FND) is a complex condition involving an interaction of psychological factors, including personality traits and beliefs about illness, neurologic and physiologic changes, and environmental reinforcers. Despite high utilization of medical services, people with FND often suffer from poor long-term health and psychosocial outcomes and are often stigmatized and marginalized within the medical community. As illustrated in this case, the challenges facing psychologists who serve these patients are myriad, and include a complex diagnostic process, natural barriers to rapport, a general lack of clarity in terms of evidence-based treatment methods, and the necessity to engage multidisciplinary teams to maximize outcomes. Given an unclear etiology and the heterogeneity of presenting physical symptoms, there are also challenges relating to which medical specialties are best equipped to manage these patients long term (e.g., psychiatry, psychology, neurology, rehabilitation).

## **FND Definitions**

Neurologic experiences that might now be labelled FND have probably been with us as long as human self-awareness. Following the thread of these conditions across centuries is an imperfect exercise because the condition itself is labelled and conceptualized differently at different points in Western medicine and cross-culturally. In the written history of psychology and medicine, FND is marked by an evolving collection of fuzzy diagnostic labels lacking in specificity and reliability. These include historical terms like hysteria, terms that contain etiologic theories (e.g., conversion disorder, psychogenic paralysis), terms that are solely descriptive (e.g., functional movement disorder), and terms that are so general as to lose utility (e.g., medically unexplained physical symptom). Lack of consistency and diagnostic certainty results in confusion among patients, families, and providers. It also contributes to mismanagement of care and a tendency to refer patients back and forth between different medical and mental health professionals.

To address this issue, there have been some important changes in definitions over the last few decades. The term functional neurological disorder has gained popularity over the last decade in large part because it is etiologically agnostic, covers a wide range of symptom presentations, and is more likely to be accepted by practitioners across a range of disciplines as well as among patients. The DSM-5-R adopted the term Functional Neurological Symptom Disorder for these reasons while retaining "Conversion Disorder" in parentheses for historical consistency. In brief, FND is defined as involuntary motor and sensory symptoms not explained by other medical or psychiatric conditions that are inconsistent with medical knowledge. FND is commonly used as an umbrella term under which subtypes have emerged including functional movement disorder (FMD), characterized by primary motor changes, and psychogenic nonepileptic seizures (PNES; aka functional seizures), characterized by non-epileptiform events that present as seizures or full-body spasm. These FND subtypes represent just some of the many ways that FND can manifest.

Importantly, FND is not a diagnosis of exclusion to be made when everything else has been ruled out. In fact, a key feature of FND diagnosis includes the presence of positive signs and symptoms that are inconsistent with known neuromuscular physiology or neurological disease. The diagnosis thus requires a physical exam to demonstrate a symptom that can only be generated through effort that moves against physiology (e.g., Hoover's sign, entrainable tremor). Notably, FND is the only diagnosis in the DSM that requires such an exam, which emphasizes the necessity that psychologists coordinate with medical providers in evaluation and diagnosis. In addition to the importance of ruling **out** disease processes and ruling **in** positive signs, patients are less likely to readily accept an FND diagnosis without thorough medical workup.

# **Neurobiological and Cognitive Models**

While the neurobiological basis underlying FND is poorly understood, there is converging evidence from fMRI, MRI, and cognitive science supporting both structural and connectivity differences in individuals with FND (Stone et al., 2020). In brief, the cognitive model of FND indicates that the individual's beliefs about motor or sensory functioning can override sensory inputs. Rather than changing top-down expectations regarding functioning in response to motor and sensory inputs, the motor and sensory functioning are altered to match the expectations contributing to degradations in functioning (Edwards et al., 2012). This model is supported by neuroimaging evidence that individuals with FND have alterations in the sensorimotor, attention, limbic, and self-referential/awareness networks (Perez et al., 2021a). While much more research is needed, great strides have been made in recent years to reveal the pathophysiology of FND further supporting the biopsychosocial model of FND.

# **Stressors and Trauma**

Trauma theories of FND dominated the last century in the US and Europe. The central idea was that physical symptoms represented "conversion" of emotional stress into physical symptoms. This theory was so dominant in the US that it led providers to search for repressed memories among patients who reported no trauma histories. Notably, this interpretation has lost popularity as an extensive body of literature shows that a significant proportion of patients with FND have no identifiable preceding stressful life events or lifetime trauma histories (Ludwig et al., 2018). Although some may report recent stressful life experiences, these are common in the general population, and determining causation is near impossible. The DSM-5 thus removed criteria present in earlier versions that required the identification of a stressful event preceding symptom onset or exacerbation. Although acute and chronic stressors are still emphasized as a risk factor for FND, and histories of trauma may be relevant for some with FND, the clinician is encouraged to examine the contributions of stress and trauma as they would in other patient populations. Attributing symptoms to stress or trauma alone is most likely inaccurate and can be harmful.

Sarah had her symptoms attributed to stress by a wellmeaning physician who was likely familiar in the conversion theory of FND and aimed to alleviate her worry. Like many patients, she experienced this explanation as confusing and dismissive. She did not report any recent stressors in her encounter and she told the physician she did not perceive herself to be stressed or distressed prior to symptom onset.

# **Comorbid Somatic Symptoms**

FND is commonly associated with a range of non-specific somatic symptoms that extend beyond sensorimotor dysfunction. Among the most common accompanying somatic symptoms in FND are pain, fatigue, and cognitive difficulties, often described as "brain fog," and these can be both prominent and disabling. A recent review found that among those diagnosed with FND, 12.5-32% also met criteria for DSM-IV somatic symptom disorder with pain (Maggio et al., 2020). This dual diagnosis has been correlated with poorer clinical outcomes (Gelauff et al., 2019). Pain and fatigue may also trigger or exacerbate functional neurological symptoms and contribute to frequency and severity of non-epileptiform seizures. How and when to address these non-specific symptoms is often a challenge for clinicians and there exists little research on this topic to guide treatment approaches.

In the case of Sarah Waters, her course was complicated by fatigue and cognitive fog. She reported that weakness in her legs was worse when fatigued and she described that cognitive fog interfered with her ability to read, answer emails, or manage important medical paperwork. Although not primary symptoms of FND, these associated features were prominent in her perception of functional decline and acquired disability.

# **Clinical and Ethical Challenges**

## **Communicating the Diagnosis**

For many years, providers withheld diagnosis of FND from patients to protect them from what was perceived as a psychologically threatening reality. This approach originated with Freudian notions that "conversion" symptoms were symbolic representations of repressed trauma that the patient was unable to process. Conveniently, this also allowed providers to avoid discussing an uncomfortable and complex diagnosis with a patient. However, using deception for the patient's "benefit" not only placed the psychologist in an ethical dilemma, but it also withheld information important for the patient to provide informed consent to treatment.

It is now clear providers should communicate a diagnosis of FND with transparency (Stone et al., 2020). This transparency is particularly important in the context of the 21st Century Cures Act, which allows patients access to their physician notes. Providers treating individuals with FND who have not discussed the diagnosis with the patient may be reluctant to document their impressions. Instead, coded language and vague terminology (e.g., "non-physiologic finding") is often used to communicate their clinical formulation. While this may avoid disrupting rapport with a patient engaged in medical treatment, it also hinders communication important in continuity of care. It may also place the psychologist in the uncomfortable situation of communicating to patients the diagnosis of FND that has only been covertly communicated through medical records. As seen in the case of Sarah Waters, the physician documented positive signs of FND but did not communicate the diagnosis to the patient. The psychologist is thus put in the position of informing the patient that their provider is considering FND. It is always best in these situations to err on the side of honesty and transparency. It should also be noted that even when the diagnosis of FND is communicated effectively, patients may have difficulty understanding or accepting the diagnosis. It is also the role of the psychologist to provide ongoing psychoeducation about the diagnosis and help the patient understand how the diagnosis relates to their experience. Giving the patient reliable resources to do their own research is also exceptionally useful with this population (e.g., www.neurosymptoms.org).

# Malingering

The voluntariness of symptoms is often questioned by providers assessing or treating individuals with FND. Part of the challenge is that providers who see symptoms inconsistent with disease suspect malingering or factitious disorder. Consequently, patients diagnosed with FND often have their symptoms questioned and invalidated during medical appointments. In fact, queries into the believability of their symptoms occur across domains of their life and often interfere with their personal and health care relationships (Dosanjh et al., 2021). As such, patients often present to medical evaluations with greater sensitivity to provider impressions and are hypervigilant for signs that their concerns will be dismissed. It behooves clinicians working with patients diagnosed with FND to put aside questions of believability. Falsification of symptoms or willful exaggeration of symptoms, as seen in malingering, is rare in FND. In the absence of overt evidence of feigning, the provider is encouraged to avoid investigating the voluntariness of symptoms as this type of investigation is likely to damage patient-provider relationship and be inconclusive.

#### **Assessment and Treatments**

#### **Physical Exam**

Neurologists are well placed to conduct a physical exam of neurological symptoms and determine whether symptoms are consistent or inconsistent with medical knowledge of neurological disease. There exists a wide host of bedside tests that can be performed to diagnose FND that vary according to the symptom in question. A review of "rule-in" signs of functional neurological disorders is available in the literature and these tests have varying sensitivities and specificities (Aybek & Perez, 2022). In general, "rule-in" signs are one of the core criteria from the DMS-5 for diagnosis of FND. These positive signs may also be used by physicians to enhance patient understanding and awareness of FND symptoms. For example, medical records indicated Sarah's leg weakness was inconsistent with medical knowledge as identified with Hoover's sign. Hoover's sign is evidence that lower extremity weakness is inconsistent with known physiology. When asked to flex her weak leg, there was no muscle tone felt by the examiner. When she was asked to flex the healthy hip against resistance, the strength of the hip extension of the weak leg increased indicating her involuntary

Table 1 Guide to Clinical Assessment Domains and Relevance to FND

strength was greater than voluntary strength. This "ruled-in" FND as a cause of her weakness.

### **Clinical Interview**

The clinical interview for a patient with FND can help determine prognostic factors and comorbidities, and guide treatment planning. It is an essential part of FND assessment that is ideally conducted by psychologists or other mental health practitioners. The clinical interview for FND is similar to standard clinical interviews with an additional emphasis on symptom course and timeline, illness beliefs, precipitating events, among others. A practical guide for assessment of FND is provided in Table 1 (Perez et al., 2021b).

#### **Assessment Tools**

Given that FND can present with such a wide range of symptoms, developing standardized symptom measures to track change has proven to be challenging. These challenges are reflected in a recent consensus statement (Pick et al., 2020). Some of the more common measures include the Simplified Functional Movement Disorders Rating Scale (S-FMDRS), which requires observation of 7 body regions

Domain	Relevance in FND
Demographic Characteristics	<ul><li>FND is more common in women.</li><li>It affects people across the lifespan including children and older adults.</li><li>Most often diagnosed among people in their 30s and 40s.</li></ul>
Symptom Onset and Course	<ul><li>Onset can be abrupt or gradual.</li><li>Course of symptoms may be intermittent and wax and wane considerably.</li></ul>
Precipitating Factors	<ul> <li>Common precipitating factors are medical events (e.g., head injury), emotional stressors (e.g., death of loved one), or both.</li> <li>Not all patients will have identifiable precipitating factors.</li> </ul>
Medical Comorbidities	<ul> <li>Medical comorbidities are common.</li> <li>FND may co-exist along other neurological conditions (e.g., stroke, Parkinson's disease).</li> </ul>
Associated Features	<ul><li>Pain, fatigue, cognitive fog, dizziness, and nausea are common comorbid features of FND that warrant assessment.</li><li>These features can interfere with engagement in treatment and contribute to acquired disability.</li></ul>
Previous Medical Experiences	<ul> <li>Medical mistrust is common.</li> <li>Willingness to engage in treatment for FND may be variable.</li> <li>Psychology can be a corrective experience through validation of symptoms and can improve treatment engagement.</li> </ul>
Past and Current Psychiatric Symptoms	<ul> <li>Depression, anxiety, and posttraumatic stress disorder (PTSD) are common.</li> <li>Not all people with FND have a current or past psychiatric history.</li> <li>Care should be taken to avoid attributing FND to psychiatric symptoms when they are present.</li> <li>Presence of ongoing dissociation is a negative prognostic factor.</li> </ul>
Illness Beliefs and Disability	<ul> <li>Some may resist FND diagnosis and misattribute symptoms to mysterious or undiscovered disease.</li> <li>Patients who accept FND diagnosis are more likely to benefit in treatment.</li> <li>Disability conviction may interfere with recovery.</li> </ul>
Social Support and Social Reinforcers	<ul> <li>Social support that reinforces independence and autonomy can help with recovery and reduce relapse.</li> <li>Absence of social support, presence of loneliness, or a social environment that reinforces and incentivizes disability can contribute to maintenance of symptoms.</li> </ul>

and two functions (speech and gait), and the Clinical Global Impression (CGI) scale, which asks the responder to measure subjective clinical improvement following treatment and can be self-reported or measured by an observer. Other assessment tools to measure common associated conditions for depression, anxiety, PTSD, fatigue, sleep, and pain are also recommended.

#### **Rehabilitation Therapies**

Rehabilitation therapies are gaining prominence in the treatment of FND, particularly among those with persistent motor symptoms. Physical therapy (PT) is one treatment modality that has been studied both in isolation and within multidisciplinary programs. In a consensus paper outlining guidelines for PT-based approaches for FND, step-wise approach to treatment is recommended starting with symptom-free movements, which can then be built on by learning more complex movements (Nielsen et al., 2015). This allows for "neural retraining." Reinforcement of normal movement and using techniques such as distraction during treatment is recommended. Consensus guidelines for occupational therapy (Nicholson et al., 2020) and speech and language therapy have also been published (Baker et al., 2021).

Multidisciplinary and interdisciplinary programs for treatment of FND have emerged primarily in academic medical centers. These typically consist of intensive outpatient or inpatient programs that include physical therapy, psychotherapy, occupational therapy, and speech therapy as needed in conjunction with neurology and nursing. Durations are typically on the order of weeks and are tailored to the patient needs. Preliminary outcome data from such programs are promising with significant reduction in symptoms and improved functioning at long term follow-up (Perez et al., 2021c).

## Psychotherapy

There exist two structured protocols for this population (LaFrance & Wincze, 2015; Williams et al., 2017) but treatment approaches used for other chronic conditions can be easily adapted. The research on psychotherapy for FND typically addresses one of two approaches: cognitive-behavioral or psychodynamic. Both forms of therapy aim to increase awareness of contributions to FND symptoms and promote more effective stress management. There is no strong evidence that one therapeutic approach is more effective than another, although the research evidence for cognitive behavioral therapy (CBT) is more robust (Gutkin et al., 2021).

Overall, research indicates psychotherapy has positive effects on patients with FND but findings are mixed and the effects are not always seen in reduction of symptoms. For instance, in the largest randomized clinical trial to date, Goldstein et al. (2020) found no significant difference in number of functional seizures between those who engaged in CBT for 12 months and those who received standardized medical care. However, the CBT group rated functional seizures as less bothersome, reported better health-related quality of life, less overall psychological distress, fewer somatic symptoms, greater self- and clinician-reported change, and greater patient satisfaction with treatment (Goldstein et al., 2020). Yet, other studies using smaller sample sizes have found direct effects of CBT on FND symptoms. Espay et al. (2019) found those with functional tremor who engaged in CBT had reduced tremor severity as compared to controls, and treatment responders showed decreased activation in the anterior cingulate/paracingulate regions on fMRI posttreatment (Espay et al., 2019). In addition, one study examining the outcomes of cognitive behavioral therapy for PNES in Sudan found treatment was effective in a resource limited context (Osman et al., 2020).

## **Course and Prognosis**

There exists a limited body of FND research examining prognostic factors associated with clinical outcome, and the research that has been done demonstrates a high variability of the course and prognosis of FND. While some patients have an acute onset of FND symptoms that remit within weeks, others have a prolonged course persisting for years or experience a fluctuating course of waxing and waning symptoms. Although not an exhaustive list, research (e.g., Gelauff et al., 2019) suggests some factors that may predict better clinical outcomes in FND are early diagnosis, shorter duration of symptoms, engagement with medical system for treatment of any kind, patient perception of effectiveness of psychotherapy treatments when enrolled, and secure attachment traits. Factors that may be associated with worse clinical outcomes include comorbid chronic pain (Maggio et al., 2020), diagnosis in older adulthood, ongoing litigation or disability claims, and comorbid psychiatric conditions.

There is a growing body of evidence highlighting the benefits of FND treatment. In a scoping review of inpatient treatment of 458 patients with FND, 90% showed at least some improvement in symptoms at discharge (Gilmour & Jenkins, 2021). Additionally, positive outcomes have been reported in shorter outpatient-only models of rehabilitation therapies (Czarnecki et al., 2012). A recent example of intensive outpatient rehabilitation approach comes in the oneweek multidisciplinary "MoRe" program (Jacob et al., 2018) that showed 69% of patients reported symptoms improvement, and that those improvements persisted at a six-month follow-up.

There exists a major gap in the FND literature as few studies report on race/ethnicity or other variables pertaining to individuals social-cultural backgrounds or identities. Cultural context and identity are important considerations for clinicians and research is needed to understand how these factors may influence symptom onset and prognosis. In addition, a large body of literature indicates social determinants of health are important in predicting health outcomes and it is reasonable to suspect the same is true among individuals with FND. In fact, one treatment study found that the majority of patients with PNES enrolled in the study were living in areas of high deprivation but the effect on outcomes was not investigated (Goldstein et al., 2020). More research is needed to capture characteristics of patients diagnosed with FND and how sociocultural backgrounds may impact outcomes.

Overall, the course and prognosis of FND can vary considerably across patients. The factors that may predict better or worse outcomes are still under investigation, and few long-term follow-up studies exist. While more research is needed, early diagnosis and engagement in treatment appear to be important in improving clinical outcomes.

#### **Multidisciplinary Care**

The role of the psychologist in caring for patients with FND can vary significantly across settings and across patients. Given the symptom variability in this patient population, a one-size-fits-all approach is likely ineffective. In some instances, a psychologist may work with the patient in a non-manualized way to support the education and motor retraining occurring in rehabilitation therapies while helping the patient identify factors that may exacerbate or ameliorate symptoms and learn stress management. In other cases,

Table 2 Cross-Discipline Principles for Treatment of FND

a manualized CBT approach may be more appropriate to address specific symptoms causing disability such as the manual, "Treating Non-Epileptic Seizures" by LaFrance & Wincze, 2015. Table 2 contains recommendations for crossdisciplinary options for patients with FND.

Regardless of setting, health service psychologists are best positioned to advocate for the needs of patients diagnosed with FND within multidisciplinary teams and the medical system at large. Provider discomfort and negative perceptions of patients with FND are common and can delay appropriate care. It is not uncommon for providers to perceive patients with FND as not belonging in their specialty because symptoms are perceived as "psychiatric" or "not real." Consequently, patients are regularly bounced between disciplines and excluded from specialty services. Without a home in most medical systems, these patients do not receive proper diagnosis, explanation of symptoms, or access to treatment. Psychologists can minimize the impact of these biases on quality of care through education and advocacy. This may take the form of advocating for longer inpatient rehabilitation stays, supporting disability claims, and facilitating access to specialty services such as rehabilitation therapy. As few providers are formally trained in diagnosis or management of FND, psychologists may also find themselves educating team members on FND.

# **Conclusions and Lessons Learned**

Sarah Waters presented to her psychology appointment without a clear diagnosis or follow-up plan aside from her referral to the psychologist. Although the psychologist suspected FND based on the medical chart, it was clear the physician had not communicated this impression to the

Key Ingredient	Description
Psychoeducation	Provide education to patient and family about FND and correct misattributions or misunderstandings regarding symptoms.
Reduce Stigma	Provide explicit validation that symptoms are real and patient suffering is recognized. This aims to reduce internalized stigma and fears that symptoms aren't believed.
Build Rapport	Patient-provider trust is essential and must be established prior to challenging the patient in interventions.
Positive Expectations	Establish positive expectations about recovery and reinforce hope for improvement of function.
Focus on Function, Not Symptoms	FND symptoms are often exacerbated when attention is drawn to symptoms. In treatment, set goals around improving functioning rather than reducing symptoms. Symptom reduction can be presented as a second-ary or indirect consequence of successful treatment.
Avoid Adaptive Equipment	Emphasize autonomy and independence and avoid introducing adaptive equipment or other accommoda- tions as patients may become dependent on these for function.
Involve Family/Caregivers	Support networks may inadvertently reinforce symptoms or contribute to illness beliefs. Involve support persons when possible and help identify dynamics that may reinforce disability. Conversely, demonstrate to caregivers how to support patient's autonomy and independence.
Collaboration	Open communication with patient, family, and other providers in a clear, transparent, and consistent manner will support patient's trust, engagement, and self-efficacy in their care.

patient. The psychologist had to decide whether to convey the physician's diagnostic impressions or to withhold that information. As discussed above, withholding information typically delays appropriate workup and diagnosis and feeds into mistrust of the medical system, which can be a barrier to engagement in treatment. Thus, going into the appointment, the psychologist knows to leave time for extensive psychoeducation and processing of the suspected etiology of symptoms.

In addition to a typical clinical interview, the psychologist probes domains highlighted in Table 1 while noting positive and negative prognostic markers that will help with treatment planning. Sarah reveals important information about beliefs underlying her symptoms including the fact that her neurological symptoms started shortly after a gastrointestinal infection contributing to beliefs that she is vulnerable to an undiscovered illness. The psychologist also learned the symptoms started shortly before the school year resumed and were often present in the classroom setting suggesting stressors related to teaching may be associated with timing and maintenance of symptoms. Reactions from students and accommodations received for her symptoms may have inadvertently reinforced her illness beliefs and brought greater attention and concern toward her symptoms. Throughout the interview, positive prognostic factors were noted including supportive family and friends, prior positive experiences with psychology in treatment of anxiety, and the expectation that symptoms were temporary. Some concerning negative prognostic factors included her comorbid cognitive fog and fatigue that was contributing to disability as well as her use of a wheelchair, which was not medically prescribed. The use of a wheelchair concerned the psychologist that the patient may have a strong disability conviction that belies her expectations to get better. The psychologist also noted that the motor symptoms (tremor and weakness) were persistent and may benefit from physical therapy.

After establishing rapport, the psychologist reiterates to Sarah that her symptoms are real, believed, and contributing to her suffering. Although stress and ongoing stressors are acknowledged and assessed, the psychologist addresses the myth that FND symptoms are caused by stress alone. The psychologist uses the opportunity to communicate the suspected diagnosis of FND and provides extensive psychoeducation about the condition acknowledging there are many aspects of the mechanisms that are poorly understood. Following the clinical interview, the psychologist forms a treatment plan involving multiple disciplines.

The critical elements for successful treatment will include quick and accurate diagnosis and engaging a multidisciplinary team. The psychologist will refer Sarah to a neurologist familiar with FND who can do a medical workup of all symptoms and demonstrate the positive signs for FND. Sarah will also be referred to physical therapy to "retrain" the abnormal motor symptoms she has developed and promote independent mobility. The psychologist will also start cognitive behavioral therapy for FND to continue psychoeducation about the diagnosis, reinforce principles of "retraining the brain" learned in physical therapy, address misattribution and unhelpful illness beliefs, as well as examine and treat other factors that may be contributing to symptom onset and maintenance. The psychologist will communicate with her providers regularly to ensure all are aware of the treatment plan and are using consistent language and setting consistent goals and expectations. When ready, the psychologist will also help Sarah with a gradual return to work plan and will work with the care team to develop a relapse prevention plan.

While FND has largely been considered a psychiatric condition for several decades, there is an emergence of interest in addressing the condition as a medical disorder resulting in acquired disability and deserving attention from neurology, rehabilitation, and psychiatry. Psychology therefore plays an integral role not only for the patient with FND but for the multidisciplinary team with mixed levels of familiarity with FND. Health service psychologists are especially well equipped to help patients with FND whose illness beliefs and symptom attributions play an integral role in their clinical outcomes. It behooves psychologists to be involved in helping care for this vulnerable patient population that is too often relegated and marginalized in medicine.

### **Key Clinical Considerations**

- Always be transparent about the diagnosis of functional neurological disorder and provide repeated psychoeducation regarding the diagnosis.
- Do not attribute functional neurological symptoms to "anxiety" or "stress"; this is an oversimplification of FND and often invalidates the patient's experience.
- Diagnostic assessment should be done in collaboration with a physician who can identify positive signs of FND and conduct workup for comorbid disorders.
- Psychologists may play many important roles in management of care for patients with functional neurological disorder including educating multidisciplinary teams with variable FND experience on best practices for treatment of FND.

# Declarations

**Conflict of interest** The authors have no conflicts of interest, external funding, and other disclosures to report.

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