Commentary

FUNCTIONAL NEUROLOGICAL DISORDER: AN EXPLORATION OF HISTORICAL EVOLUTION, RISK FACTORS AND MULTIDISCIPLINARY MANAGEMENT

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Description

The shrinking specialty

Neurologists have seen their specialty shrinking since advanced imaging and other investigations rendered bedside diagnosis less relevant. Perhaps related to this is the neurological volte-face interest in dementia and recent enthusiasm for FND (Functional Neurological Disorder). It turns out that roughly 1 in every 6 neurology out-patient referrals (Carson and Lehn) has FND, so maybe it's a good thing that neurologists are now paying attention to the brain's software as well as the hardware.

Clinical experience suggests the initial emphasis on the physical symptoms of FND is more acceptable to patients than a psychiatric label. The language of FND is also perceived as more neutral, with no implicit causal associations. The presence of normal or negative neurological investigations can now be a cause for prognostic optimism rather than "nothing more to be done" or "too hard basket," once it is explained that this is not deliberate feigning or attention-seeking behaviour.

FND sits on the border of psychiatry and neurology. It recognises that brain networks as well as brain anatomy can contribute to neuropsychiatric symptoms. FND involves a disorder of brain function, not of brain structure. All neurological disorders have psychological or psychiatric associations or sequelae, and arguably FND is a late 'wake-up call' to neurologists for their blind spot, *viz* the psychological causes and consequences of brain disorder.

DSM-5 diagnostic criteria for functional neurological disorder are the same as for conversion disorder

1. One or more symptoms of altered voluntary motor or sensory function.
2. Clinical findings provide evidence of incompatibility between the symptom and recognised neurological or medical conditions.
3. The symptom or deficit is not better explained by another medical or mental disorder.
4. The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation.

FND has long been recognised as a neuropsychiatric disorder. Hippocrates described a condition of 'hysteria' where the uterus 'dried up' and was said to wander around the body in search of moisture, causing symptoms by pressing on other bodily organs. The Greek word for uterus is 'hystera'.

Further history of FND is seen with Janet and then Briquet, Freud, and Charcot in France during the late 19th century, writing about the neuropsychiatric presentations of 'hysterical' states, which they related to unconscious trauma or desires.

The word 'hysteria' might imply that it's a female disorder, and Hallet, et al. note that the estimated gender imbalance for FND is 60%-80% female [1,2].

Later, after Freud and Charcot, we see other diagnostic labels for FND such as 'conversion disorder,' 'dissociation,' and 'psychogenic'. Conversion disorder is a diagnostic category which until very recently was applied to patients who present with distressing neurological symptoms, such as numbness, blindness, paralysis, or fits which were not consistent with a well-established 'organic' cause.

Conversion disorder is not common, with a prevalence of ~3 per 100,000 people. Whilst FND is fashionable now, its not clear if it will have a similar low prevalence over time, with initial estimates being comparable to multiple sclerosis and conversion disorder, at 3-5 per 100,000 people [3,4].

Risk factors for FND

The presence of psychological or pre-existing mental health problems is known to be a major risk factor for FND, including historic early abuse and more contemporary depression and anxiety. Indeed, most neurotic conditions can lead to physiological as well as psychological symptoms, with examples of the neurophysiology of neurosis being lethargy; poor concentration and memory, diminished appetite in depressive states, as well as over-arousal and sweating or nausea in anxiety and PTSD.

- Previous functional symptoms
- Female gender
- Adverse early life experiences
- Underlying personality vulnerabilities
- Existing neurological deficits
- Pain or an unusual physical event (eg an unpleasant drug reaction)
- Deconditioning

Explanatory models in FND

One aetiological model for conversion disorder (aka FND) is that these symptoms arise in part as a response to stressful situations affecting a patient's mental health or an ongoing mental health condition such as depression.

Psychological pathoplasticity where one person may present with an unexplained weakness, whereas another might have memory impairment, or an unusual seizure is not fully explained or understood by the re-working of conversion disorder into FND. This does not imply that a unified basal psychological problem might result in these varied clinical states, and the review by Hallet, et al. notes that not all individuals who present with FND have an obvious pre-existing psychological or neurological condition [2].

The innovative concept within 'FND,' as opposed to conversion disorder, is to ask neurologists to regard non-epileptic seizures; unexplained movement disorders; subjective cognitive impairment and dizziness as being 'ruled in' with a diagnosis of FND.

An explanatory model for FND after that the brain has a model of the body and world which adds predictive coding to multimodal integration [2]. Feedback signals that don't match the predictive coding create prediction errors which modifies the model so that predictive coding matches subsequent feedback. In FND, it is hypothesized that when a prediction error is not accurately updated, neurological dysfunction is perpetuated.

Other neuro-aetiological theories for FND include excessive or dysregulated cortisol leading to misattributed symptoms, and impaired callosal or inter-hemispheric cortical communication.

Assessment and treatment

The term 'FND' covers various clinical states, with symptoms and signs of genuinely experienced alterations in motor, sensory, or cognitive performance that are distressing or impairing. FND is manifest by 1) one or more patterns of deficits consistent predominantly with dysfunction of the nervous system and 2) variability in performance within and between tasks.

The most common presentations of FND are functional seizures (also called dissociative or psychogenic non-epileptic seizures) and functional movement disorders including paresis.

FND is often split up according to symptom presentation, including

- Unexplained seizures or fits

- Functional (non-dementia) cognitive impairment
- Unexplained weakness, paralysis or movement disorder
- Visual or other sensory problems
- Persistent vertigo or dizziness

References

1. Jacob ME, Ganguli M. Epidemiology for the clinical neurologist. Handbook of clinical neurology. 2016; 138: 3-16.
2. Hallett M, Aybek S, Dworetzky BA, McWhirter L, Staab JP, et al. Functional neurological disorder: new subtypes and shared mechanisms. The Lancet Neurology. 2022; 21 :537-550.
3. Gutkin M, McLean L, Brown R, Kanaan RA. Systematic review of psychotherapy for adults with functional neurological disorder. Journal of Neurology, Neurosurgery & Psychiatry. 2021 ; 92 :36-44.
4. Keyes CLM, Dhingra SS, Simoes EJ. Change in level of positive mental health as a predictor of future risk of mental illness. American Journal of Public Health. 2010; 100: 2366-2371.

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