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Editorial

A Brief Introduction to 'Functional Neurological Disorder' - One of the Most Common but Least Heard of Neurological Disorder[a]

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Editorial

Not manypeople working in the healthcare have heard about Functional Neurological Disorder (FND), despite of the fact that it is the second most common diagnosis in Neurology,[1] accounting for 15% of all neurology outpatient appointments.[2]

FND is a neurological disorder where we see disruption of communication between brain and body. The structure of the body is fine, there is a problem with how the nervous system is functioning and the brain fails to send and receive messages correctly (FND Action). FND describes a disorder of the voluntary motor or sensory system with genuine symptoms including paralysis, tremor, dystonia, sensory disturbance (including visual loss), speech symptoms, and seizures.[1]

In a healthy functioning individual, we see a consistent flow of nerve pathways carrying the signals to and fromdifferent body parts to brain helping us to function as expected. However, when the communication is disrupted for some reason, body movements either freeze or are altered in some ways causing deviated functioning. Think about it like this, suddenly the picture on a television goes blurred or distorted because it cannot catch the signal. It tries but because the signal input is poor, the visual display becomes dysfunctional,although the television set is still structurally fine and can show you good quality pictures once the signal is restored. It is believed that the functional symptoms are something like that. The brain of the affected individual is structurally fine and there are times when the regular function comes back, but again disappears causing all that disruption in movement when body stops receiving the correct signals from brain. Technically, it is a software issue while the hardware of the machine is fine. This makes it potentially reversible source of disability.[3] None the less, it is extremely debilitating due to the unpredictability of the symptom experience and its management. It is more distressing to patients and strips them of any hope when the healthcare professionals and healthcare systemare unable to provide the appropriate support and treatment for managing the symptoms (because ofthe lack of awareness).

Historically functional symptoms were(mis)understood as part of 'hysteria'.Now, the common terminologies used are, functional neurological disorder, functional motor disorder, conversion disorder, and dissociative disorder, psychogenic or psychosomatic disorders. The cause for functional symptoms is unknown and until recently, psychological stressor was believed to be a predisposing factor, which wasa required criterion for the diagnosis in DSM IV. It is widely acknowledged that many patients with functional symptoms do not present with psychological distress and therefore, DSM V removed the criteria for psychological stressor essential for the diagnosis of Conversion Disorder (Functional Neurological Symptom Disorder).

It is not a diagnosis of exclusion but identified by diagnostic tests such as Hoover's sign, the hip abductor sign, drift without pronation, dragging gait, give way weakness, co-contraction.[4] The key processes to understand in neurobiology of FND are the abnormal attentional focus, abnormal beliefs and expectations, and abnormalities in sense of agencies.[5] The Functional Magnetic resonance imaging (fMRI) studies explain the pathophysiology of the three key processes by allowing the regional brain activation, and functional connectivity between brain areas to be measured.[6] In one such study of eleven conversion disorder (CD) patients conducted

[a]FND: 'The most common condition you've never heard of.

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by *Valerie V, et al. 2011*,[7] they observed during both internally and externally generated movement, CD patients relative to normal volunteers had lower left supplementary motor area (SMA) (implicated in motor initiation) and higher right amygdala, left anterior insula, and bilateral posterior circulate activity (implicated in assigning emotional salience). Patients often present with hypervigilance and hyper focus to the changes in their body. The abnormal health beliefs predict and reinforce the occurrence of those, further contributing to abnormal attentional focus to these physical movements and increasing effort to generate an otherwise automatic movement such as walking. The excessive abnormal attention backs the errors in body movements influencing loss of sense of agency over their body. Currently the Multidisciplinary approach (Neurology, Psychiatry, psychology, Physiotherapy, Speech and Language therapy and Occupational Therapy) is found effective for the treatment of functional symptoms. The 'biopsychosocial model of illness' is recommended to understand contribution of the biological, psychological, and social factors to functional symptoms, helping multidisciplinary team devise a clinical formulation for the treatment. The treatment focus usually is retraining the brain of the expected function, allowing it to generate automatic movements (which it knew prior to condition) without an interruption of excessive attention to it. FND can also be often accompanied by co-morbid physical and/or psychological illnesses, which could add to perpetuating factors in maintaining the disease beliefs and anticipation of the worse.

It is one of the emerging researchareas in science. What we know so far, I believe is just the tip of the iceberg. Following websites are good to educate colleagues, patients and their families on what is FND and the various aspects involved in it, https://www.neurosymptoms.org/,https://fndhope.org/,https://www.fndaction.org.uk/.

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Conflicts of Interest

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