Functional Neurological Disorder (FND) and Somatic Symptom Disorder (SSD): Assessment and Management

Gaston Baslet, M.D.

Bruce W. Carter Department of Veterans Affairs, Miami, FL
Brigham and Women's Hospital, Boston, MA
Associate Professor, Harvard Medical School

Medical Psychiatry: Comprehensive Update

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Disclosures

- The opinions expressed in this presentation do not represent the opinion of the US government
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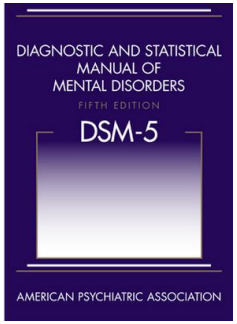
Objectives

- Formulate an updated biopsychosocial understanding of SSD and FND.
- Learn a model of care for patients with SSD and FND.
- Acknowledge current state of evidence-based treatment for SSD and FND.

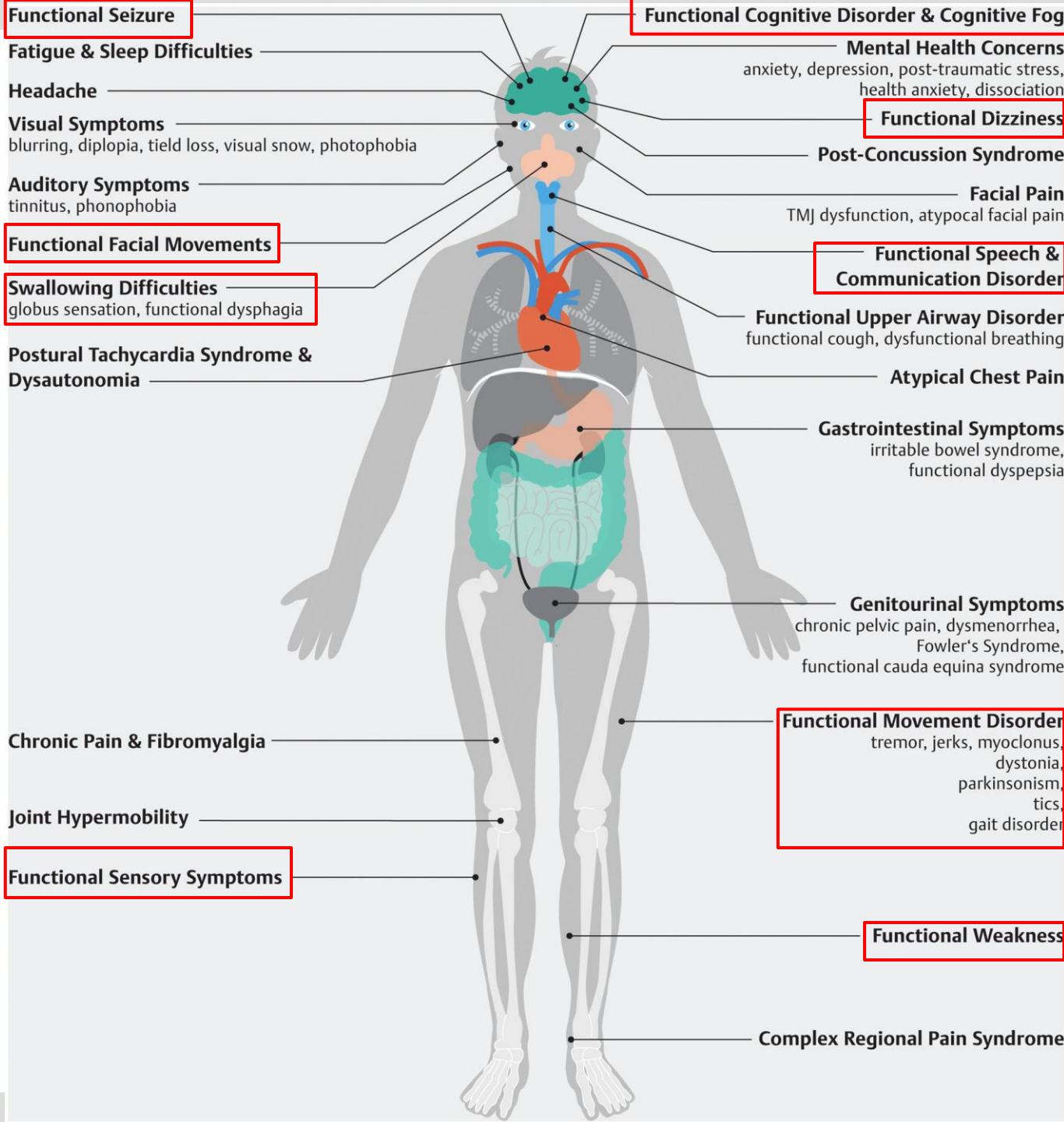
Functional Symptoms are Ubiquitous

- Gastroenterology: irritable bowel syndrome
- Urology: overactive bladder syndrome
- Rheumatology: fibromyalgia
- Infectious diseases: chronic fatigue syndrome
- Immunology: multiple chemical sensitivities
- Cardiology: atypical chest pain
- Pulmonary: chronic cough
- ENT: globus
- Gynecology: pelvic pain
- Ophthalmology: functional blindness
- **Neurology: *functional seizures, functional weakness or movement disorder, functional cognitive disorder***

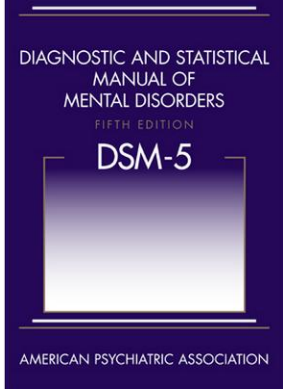


Somatic Symptom and Related Disorders

Core FND and associated symptoms



Somatic Symptom Disorder

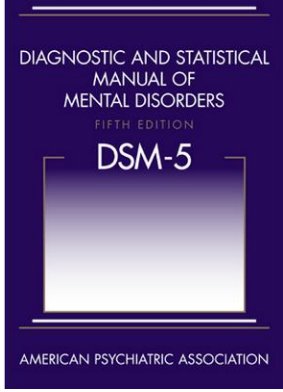


- A: Somatic symptom (one or more) – distressing or causes disruption in daily life
- B: Psychobehavioral criteria
- C: State of being symptomatic is persistent (more than 6 months)
- Specifier: with predominant pain
- Specifier: persistent (severe symptoms, marked impairment and long duration)
- Specifier: mild (1 B), moderate (2 B), severe (2 B and 2 A or severe A)

Criteria B: Psychobehavioral Symptoms

- Excessive thoughts, feelings or behaviors related to the somatic symptoms or associated health concerns as manifested by at least one of the following:
- 1- Disproportionate and persistent thoughts about the seriousness of one's symptoms
- 2- Persistently high levels of anxiety about health or symptoms
- 3- Excessive time and energy devoted to these symptoms or health concerns

Conversion Disorder (Functional Neurological Symptom Disorder)



- A. One or more symptoms of altered voluntary motor or sensory function.
- **B. Clinical findings provide evidence of incompatibility between the symptom and recognized neurological or medical conditions.**
- C. The symptom or deficit is not explained by another medical or mental disorder.
- D. The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation
- Specifier: with weakness or paralysis, with abnormal movement (FMD), with swallowing symptoms, with speech symptom, with attacks or seizures (FS), with anesthesia or sensory loss, with special sensory symptom, with mixed symptom, **cognitive deficits, dizziness**.
- Specifier: acute episode (< 6 months), persistent (> 6 months).
- **Specifier: with psychological stressor, without psychological stressor.**

American Psychiatric Association, 2013
FS: Functional Seizures; FMD: Functional Movement Disorder.

Trick or treat?

Showing patients with functional (psychogenic) motor symptoms their physical signs

Positive signs

Inconsistency (variability, distraction)

Incongruency

Diagnosis

Adapted from: Stone and Edwards, Neurology 2012

Epidemiology

- Mean frequency of SSD was[1]
- 12.9% (95% CI, 12.5 to 13.3) in the general population
- 35% (95% CI, 33.8 to 36.3) in general medicine
- 23.6% (95% CI, 22.3 to 25.0) in specialized care.

- FND is the second most common dx made in ambulatory neurology[2]
- 30% of initials assessments have a functional component[2]

- FND: Female preponderance (3:1 F:M)[3]; *children/elderly F=M*[4,5]

- Adolescence → midlife onset

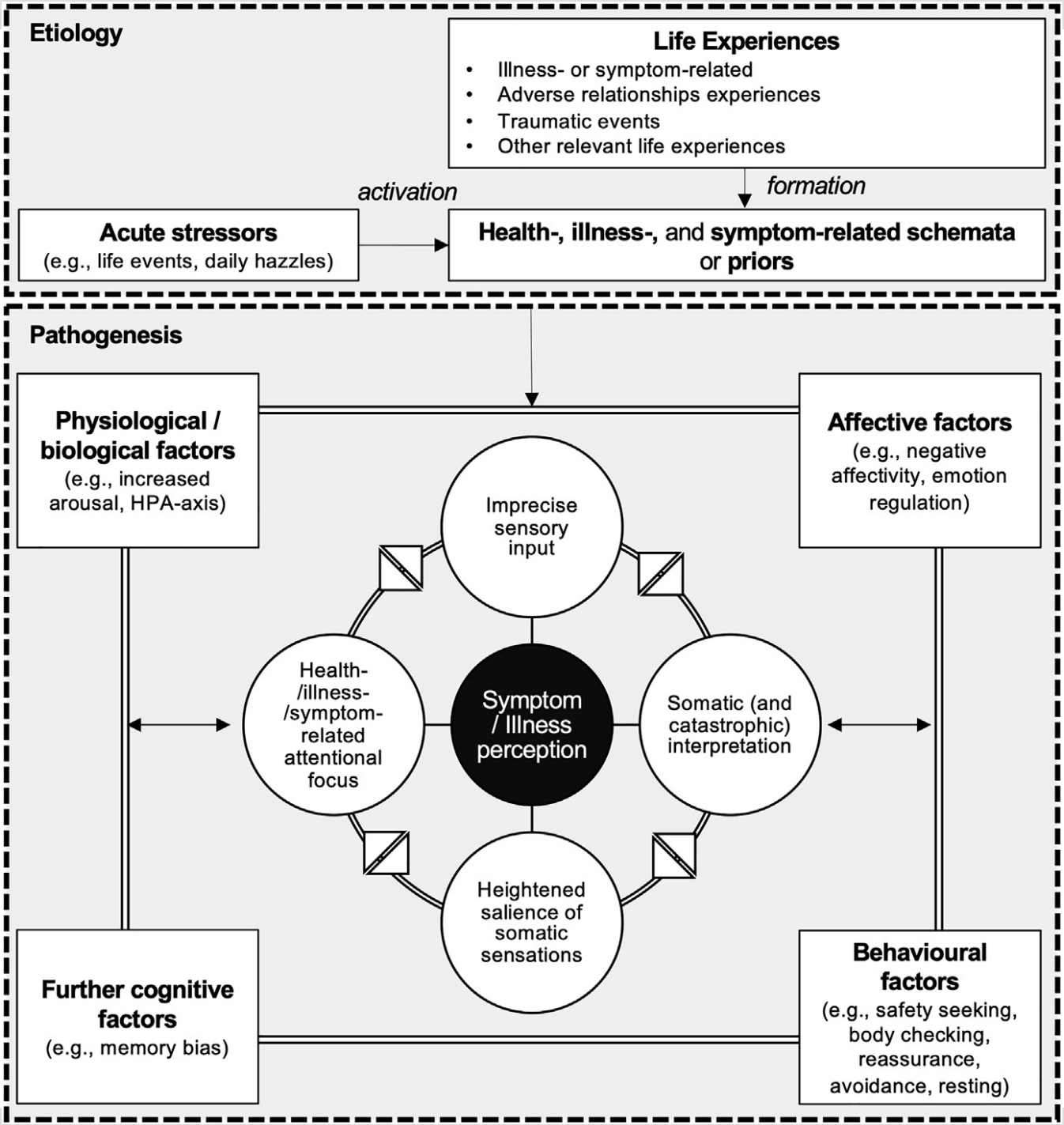
1. *Lowe et al, Psychological Medicine, 2018; 2. Stone et al, Brain 2009 ; 3. Lesser, Neurology, 1996; 4..Duncan et al, Neurology, 2006; 5.. Huang et al, J Chin Med Assoc, 2009*

Impact (data mostly from FS)

- Health Care Utilization is costly [1,2] **~1.2 bill. (adults)[3]; 88 mill.(peds)**[4]
- ↓Quality of Life in FS(= or > other neuro disorders)[5]
- Stigma[6] and caregiver burden[7] same or worse in FS than than epileptic sz
- **Increased risk of death in FS (SMR 2.5x gen. pop)**[8-9]

FS: functional seizures; SMR: standardized mortality ratio

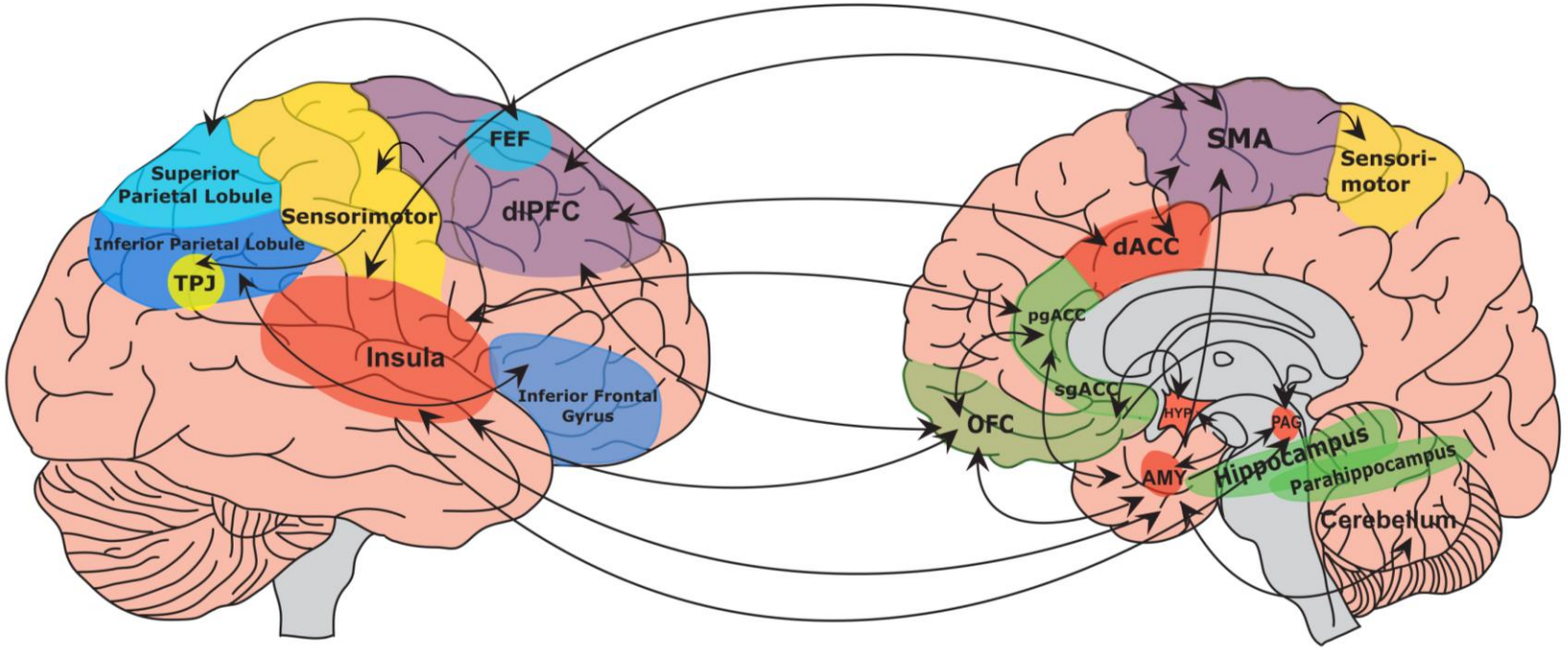
1. Martin et al, Seizure 1998; 2. Seneviratne et al, Epilepsia 2019; .3.Barsky et al, Arch Gen Psych, 2005; 4. Stephen et al, JAMA 2021;5. Szaflarski and Szaflarski, Epilepsy and Beh 2004; 6. Robson et al, Seizure 2018; 7. Karakis et al, Seizure 2014; 8. Jennum et al, E and B, 2019; 9. Nightscales et al, Neurology 2020.



Sauer et al, Neurol Clin, 2023

A brain circuitry disorder

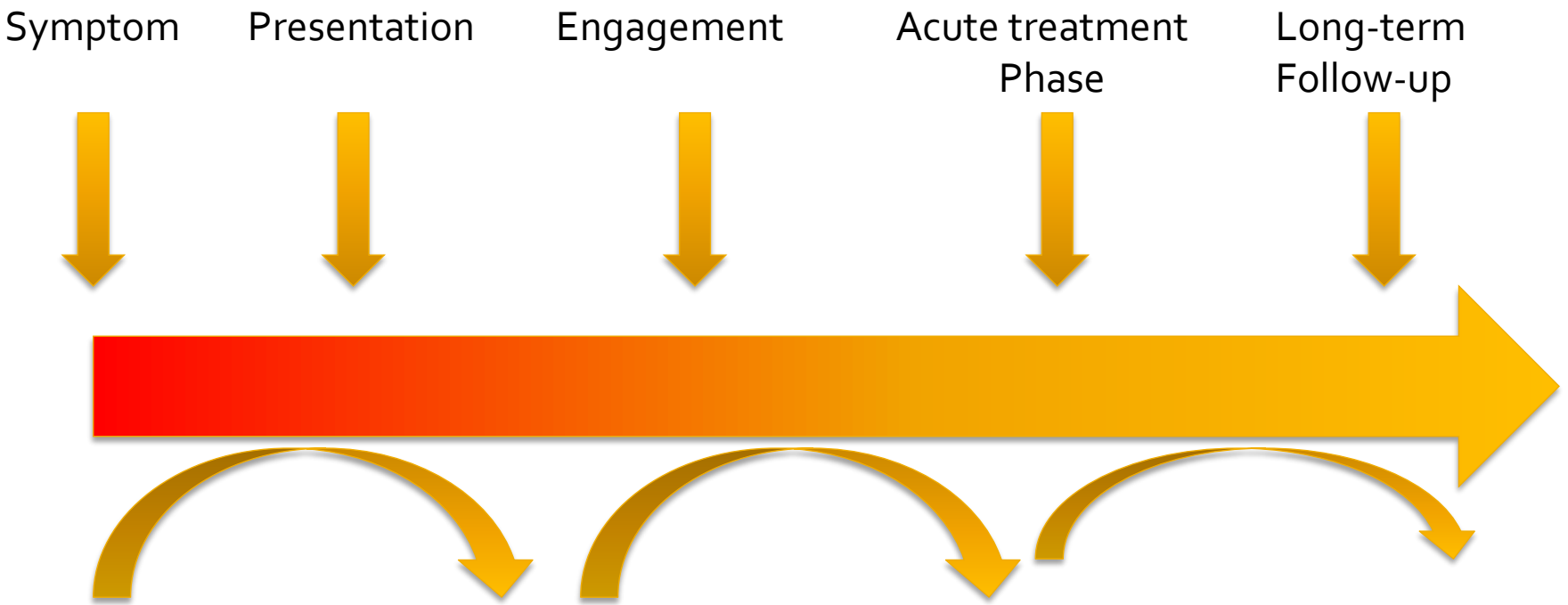
SSD/FND is a disorder where brain circuitry implicated in motor control, perceptual awareness, attention, emotional salience attribution and cognitive control is dysfunctional



Sensorimotor & TPJ networks: deficits in motor execution and feedforward signaling leading to impaired self-agency
Salience network: altered homeostatic balance, interoception, multimodal integration and emotional/self-awareness
Limbic network: impaired emotion regulation, fear extinction, value-based viscerosomatic processing
Dorsal attention network: altered goal-directed attentional mechanisms
Ventral attention network: altered stimulus-driven attentional mechanisms
Cognitive control and motor planning networks: motor planning deficits

Spagnolo et al., *Neuroscience and Biobehavioral Review* 2021

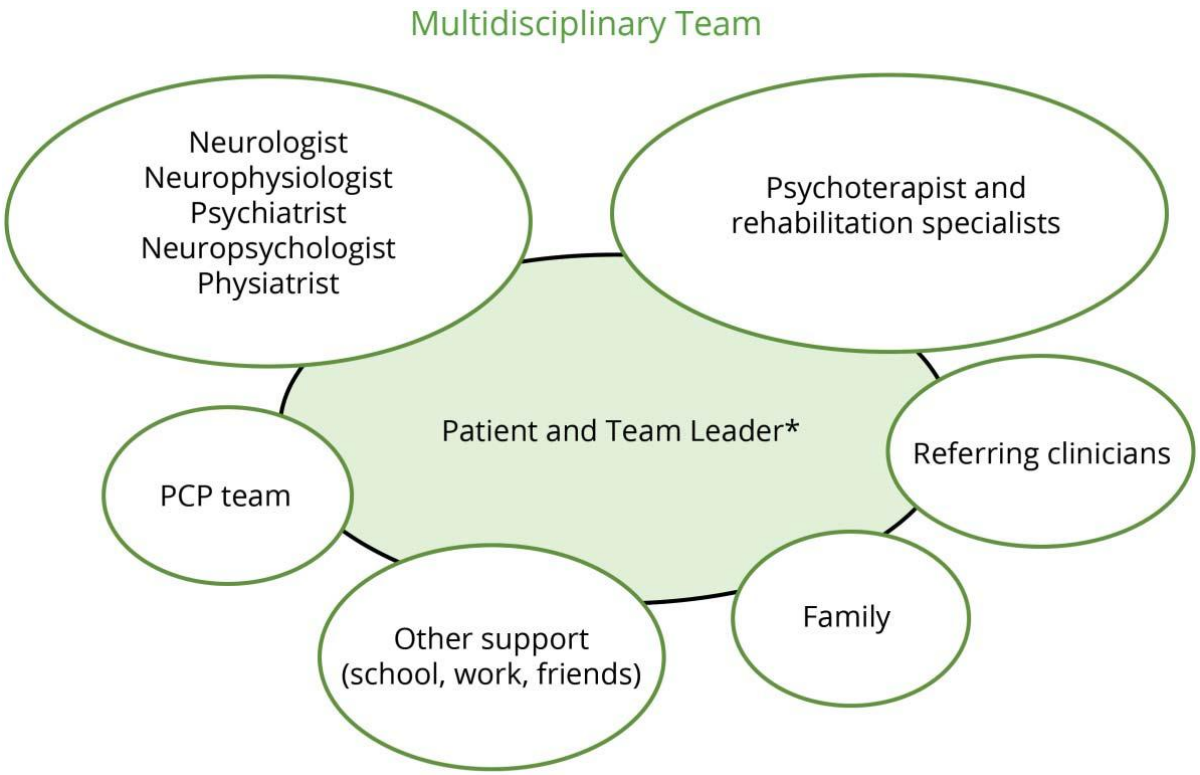
Course of treatment in SSD/FND



FND: Functional Neurological Disorder; SSD: Somatic Symptom Disorder

Baslet et al, *Clin EEG Neurosci*, 2014

Relevance of multidisciplinary care



Members of the team interact in a fluid nature as determined by the patient's needs. A neurologist may be the referring clinician or part of the multidisciplinary team.

*The Team Leader is the individual most engaged with the patient. This could be the PCP, neurologist, or one of the mental health providers.

O'Neal et al, Neurology: Clinical Practice, 2021

Treatment in FND is multidisciplinary

Contents lists available at ScienceDirect

Seizure

journal homepage: www.elsevier.com/locate/yseiz

Psychological interventions for psychogenic non-epileptic seizures: A meta-analysis

Perri Carlson*, Kathryn Nicholson Perry

Australian College of Applied Psychology, Level 11, 255 Elizabeth Street, Sydney, NSW 2000, Australia

Occasional essay

Occupational therapy consensus recommendations for functional neurological disorder

Clare Nicholson [1], Mark J Edwards,[2] Alan J Carson,[3] Paula Gardiner,[4] Dawn Golder,[5] Kate Hayward,[1] Susan Humblestone,[6] Helen Jinadu,[7] Carrie Lumsden,[8] Julie MacLean,[9] Lynne Main,[10] Lindsey Macgregor,[11] Glenn Nielsen,[2] Louise Oakley,[12] Jason Price,[13] Jessica Ranford,[9] Jasbir Ranu,[1] Ed Sum,[14] Jon Stone [3]

Neuropsychiatry

VIEWPOINT

Physiotherapy for functional motor disorders: a consensus recommendation

Glenn Nielsen,[1,2] Jon Stone,[3] Audrey Matthews,[4] Melanie Brown,[4] Chris Sparkes,[5] Ross Farmer,[6] Lindsay Masterton,[7] Linsey Duncan,[7] Alisa Winters,[3] Laura Daniell,[3] Carrie Lumsden,[7] Alan Carson,[8] Anthony S David,[9,10] Mark Edwards[1]

General neurology

Review

Management of functional communication, swallowing, cough and related disorders: consensus recommendations for speech and language therapy

Janet Baker,[1,2] Caroline Barnett,[3] Lesley Cavalli,[4,5] Maria Dietrich,[6] Lorna Dixon,[7] Joseph R Duffy,[8] Annie Elias,[9] Diane E Fraser,[10] Jennifer L Freeburn,[11] Catherine Gregory,[2] Kirsty McKenzie,[12] Nick Miller,[13] Jo Patterson,[14] Carole Roth,[15] Nelson Roy,[16,17] Jennifer Short,[18] Rene Utianski [19,20] Miriam van Mersbergen,[21] Anne Vertigan,[22,23] Alan Carson,[24] Jon Stone [24], Laura McWhirter [24]

Benefits of multidisciplinary care also demonstrated in SSD

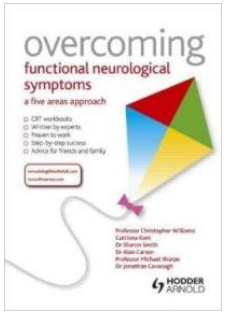
(Henningsen, Dialogues and Clin Neuroscience, 2018)

Strategies for Management of SSD in Primary Care

- Identify single gatekeeper
- Diagnose early
- Validate experience as genuine, not fake
- Screen for other physical symptoms and psychiatric comorbidities
- Monitor symptoms with appropriate measures
- Therapeutic conservatism: avoid repetitive, risky evaluations
- Provide reassurance
- Offering an explanatory model
- Change the conversation: less symptom monitoring and more engagement in life
- Break contingency between symptom complaint and receiving care
- Symptomatic relief: only temporary and if supported by evidence
- Emphasize healthy lifestyle
- Psychiatric consultation when the patient is open to it – linkage to treatment

Adapted from Henningsen, *Dialogues in Clinical Neuroscience*, 2018

Cognitive Behavioral Principles in SSD/FND



Situation, relationship, resources and practical problems
Good marriage; husband, mother and father supportive; income currently reduced

Symptoms
Tremor,
pain in arms and legs,
tired all the time

Feelings
Down, confidence knocked.
Annoyed.

Behavior
Stopped working, driving and socializing.
Searching the Internet to find out what's wrong.

Thinking
'People think I'm making this up', 'There's something seriously wrong with me'

Williams et al, "Overcoming Functional Neurological Symptoms", Hodder Arnold 2011; Kent and McMillan, Advances in Psych Treatment, 2009

CBT for SSD

- Reduces health anxiety
- Moderately effective in decreasing somatic symptom intensity (less effect than on health anxiety) compared to usual care
- Therapeutic components:
  * Psychoeducation
  * Expand to a biopsychosocial framework rather than arguing for psychological factors
  * Attention re-training (somatic hypervigilance)
  * Cognitive re-structuring (for somatic catastrophizing)
  * Stress management techniques
  * Alternatives to maladaptive behaviors
  * Reduce excessive resting or avoidance with gradual exercise exposure
  * Interoceptive exercise exposure (to examine physical activity fears)

Sauer et al, *Neurol Clin*, 2023

Review

Systematic review of psychotherapy for adults with functional neurological disorder

Myles Gutkin ,[1,2] Loyola McLean ,[3,4] Richard Brown ,[5,6] Richard A Kanaan [1]

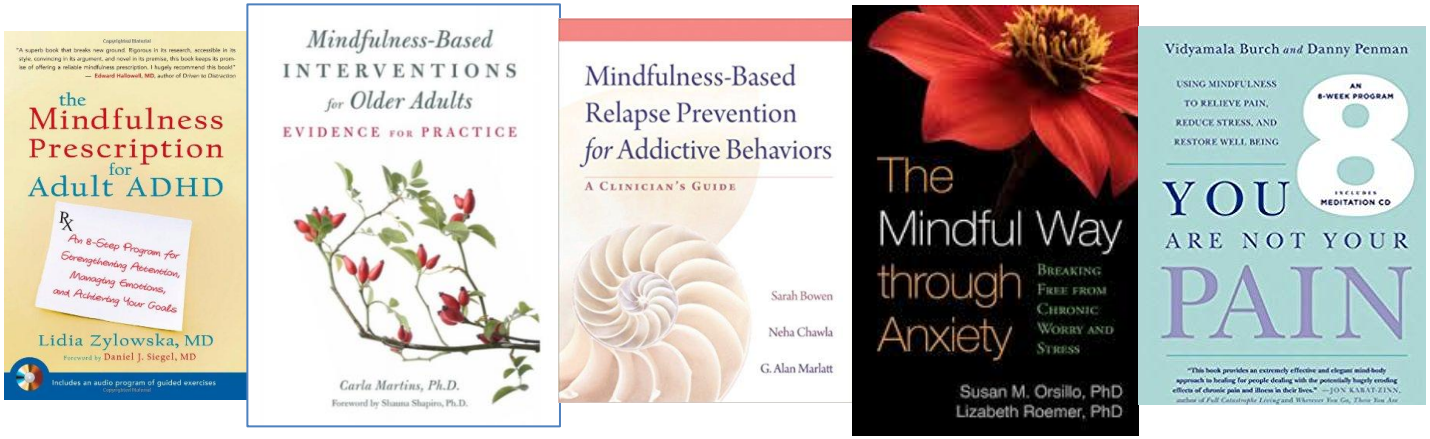
19 studies were included

- 12 skills-based, CBT-like approaches vs 7 psychodynamic approaches
- 11 pre-post studies vs. 8 RCTs
- Most studies (except 4) included only one FND phenotype
- Effect sizes showed medium-sized benefits for physical (FND) symptoms, mental health, well-being, function and resource use for both kinds of therapies.
- Outcomes comparable across both types of therapy.
- Lack of controlled trials for psychodynamic psychotherapy.
- Lack of follow-up data in majority of CBT trials

JNNP, 2020

Mindfulness-based interventions in clinical practice

- Mindfulness Based Stress Reduction (MBSR)
- Mindfulness Based Cognitive Therapy (MBCT)
- Dialectical Behavior Therapy (DBT)
- Acceptance and Commitment Therapy (ACT)



Targets of mindfulness in SSD/FND

Interoception abnormalities
Limited emotion awareness

Avoidance

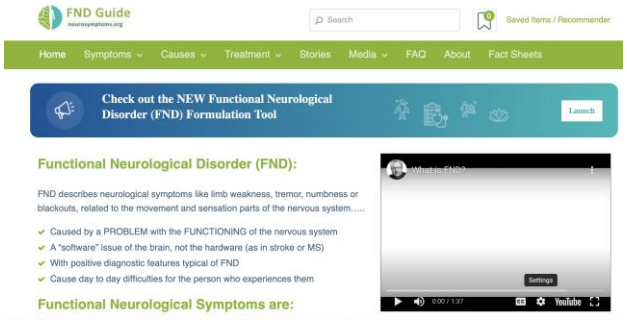
Somatic attention
Dissociative tendencies

Evidence of efficacy of mindfulness-based interventions across multiple clinical populations (including some with functional/ somatic etiology)

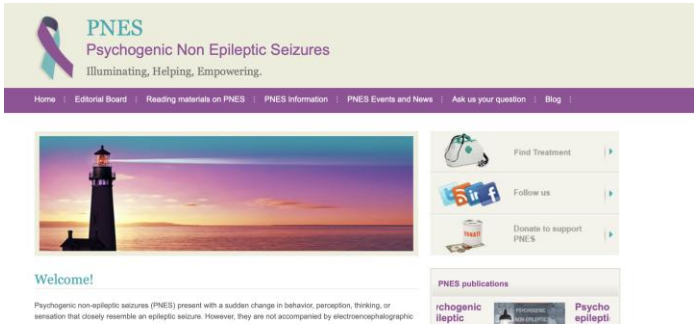
- Epilepsy (Tang, 2015; Thompson, 2015; Wood, 2017)
- Multiple Sclerosis (Grossman, 2010; Simpson, 2017; Bogosian, 2015)
- Traumatic Brain Injury (Azulay, 2013; Bédard, 2014; Cole, 2015; Tornås, 2016)
- Stroke (Lawrence, 2013; Levine, 2017)
- Mild Cognitive Impairment (Wells, 2013)
- Age-related cognitive decline (Gard, 2014)
- Subjective cognitive decline (Smart, 2016)
- Cross-diagnostic fatigue (Johansson, 2012; Ulrichsen, 2016)
- Medically unexplained symptoms (van Ravesteiijn, 2013; Zargar, 2021)
- Depression (Lynch, 2003; Kingston, 2007)
- Anxiety disorders (Orsillo, 2005; Evans, 2008)
- Post-traumatic stress disorder (Bradley, 2003)
- Eating disorder (Safer, 2001)
- Addiction (Hayes, 2004)
- Borderline personality disorder (Lynch, 2004)
- Chronic pain (Hilton, 2017)
- ADHD (Janssen, 2019)
- Functional seizures (Baslet, 2021)

Benefits in different domains according to each study. Improvements noted in quality of life, perceived health and cognitive self- efficacy, ***symptom severity*** (*seizures, functional seizures, fatigue, some cognitive measures*), depression, anxiety, cardiovascular risk behaviors.

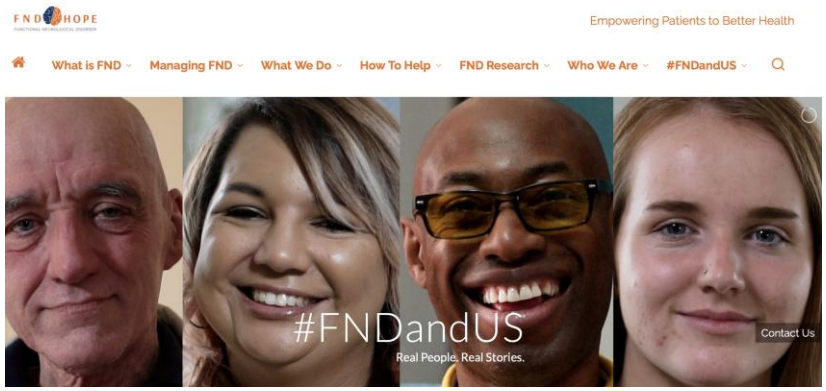
Role of education, patient support groups and self-help



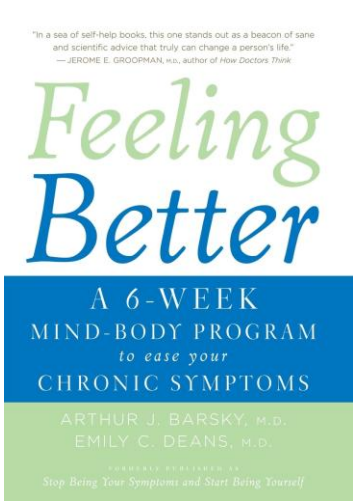
neurosymptoms.org

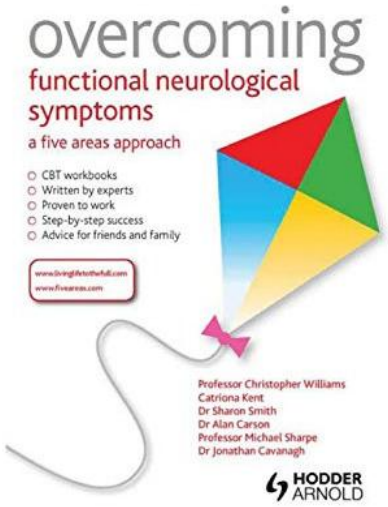


nonepilepticseizures.com



fndhope.org
Patient advocacy organization





CBT-based self-guided help books

Other therapies in SSD/FND

- Physical/ occupational/ speech therapy
- Graded exercise training for pain syndromes, chronic fatigue
- Hypnotherapy
- Prolonged exposure for comorbid PTSD and FS/ EMDR?
- Group therapy interventions
- Antidepressant treatment for IBS; gabapentin and pregabalin for FM
- Role of pharmacological treatment remains limited
- Noninvasive neuromodulation not ready for primetime for these diagnoses

FS: functional seizures; IBS: irritable bowel syndrome; FM: fibromyalgia

Henningsen, *Dialogues in Clinical Neuroscience*, 2018; Nielsen et al, *JNNP*, 2014; Baslet, *Neuropsychiaric Disease and Treatment*, 2013; Myers et al, *Epilepsy and Behavior*, 2016; Sharpe et al, *J Gen Intern Med*, 2022

Barriers to Care

Patient Related Barriers

- Lack of patient acceptance of diagnosis (stigma of psych factors)
- Avoidance tendencies
- External locus of control
- Symptom migration, heterogenous presentation
- Disability benefits
- Social isolation

Clinician Related Barriers

- Lack of knowledge and understanding by clinicians
- Lack of empathy and negative attitudes
- Concern for malingering or misdiagnosis, liability concerns (afraid of being wrong)
- Lack of collaboration with other professionals
- Lack of ownership for management of treatment

Healthcare System Related Barriers

- Lack of access to care (not just a problem in under-resourced areas)
- Lack of care co-ordination
- Lack of communication among different health care systems
- Lack of communication between providers.
- Highly specialized care may interfere with need for coordination

Tolchin and Baslet, 2017 in Dworetzky & Baslet: PNES: Toward the Integration of Care

Take-home messages

- Our understanding of SSD/FND has expanded in the last 2 decades with increased identification of neurobiological and cognitive processing mechanisms.
- Multidisciplinary collaboration allows for treatment of patients with SSD/FND with complex needs which can change over time.
- Evidence-based treatment for SSD/FND is limited but slowly growing.

FND: Functional Neurological Disorder