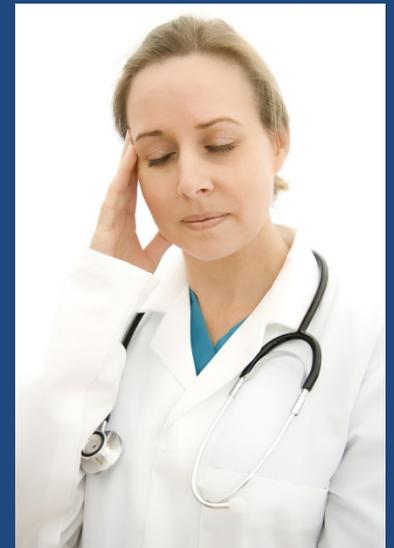


Functional Somatic Symptoms in Children and Adolescents: An Integrative Approach



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Disclosure

We have no financial relationship with a commercial entity producing health-care related products or services.

Objectives

- Describe individual, social, and environmental risk factors for functional somatic symptoms and functional disability in children and adolescents
- Discuss current theoretical models for understanding these symptoms in pediatric populations
- Describe an integrated approach to assessment and treatment of functional somatic symptoms in children and adolescents

What are functional Somatic Symptoms?

Ambiguous, non-specific **symptoms** that appear in otherwise-healthy people. Overlap in symptomology exists across diagnoses, including gastrointestinal issues, pain, fatigue, cognitive difficulties, and sleep difficulties.

Functional Neurological Disorder (Conversion Disorder)

- Neurological symptoms in the absence of classical neurological disease
 - Motor dysfunctions (gait disorder, limb paralysis, tremor)
 - Nonepileptic seizures
 - Sensory symptoms
- Much more common than previously thought
- May precede, follow, or be comorbid with other medical diagnoses (i.e. epilepsy and non-epileptic seizures)
- Symptoms may shift over time; suggestibility is common



Imaging in FND/Conversion Disorder

Study	Results
<p>25 yo woman with left handed weakness diagnosed with conversion disorder. Began rehab program and imaged every 6 months while performing finger tapping tasks.</p>	<p>Initially, decreased activation of dorsal premotor cortex with increased activation as recovery progressed. Right medial pre-frontal cortex showed initial activation with subsequent decrease during recovery.</p>
<p>4 CD patients with unilateral ankle weakness and four controls simulating weakness. FMRI conducted during ankle plantarflexion.</p>	<p>CD patient activated bilateral putamen and lingual gyri, left inferior frontal gyrus (response inhibition), left insula. Deactivation of right middle frontal and orbitofrontal cortices. Controls simulating weakness activated contralateral supplemental motor areas (Stone et al.)</p>

Imaging in FND/Conversion Disorder

Study	Results
10 subjects with unilateral sensory conversion disorder. Stimulation applied to anesthetic body part.	Decreased activation in contralateral somatosensory area with stimulation of anesthetic hand; increased activation of paralimbic cortices, right temporoparietal junction, bilateral dorsolateral prefrontal cortex, right orbital frontal cortex, right caudate, right ventral anterior thalamus, left angular gyrus (Burke et al.)
12 patient with motor conversion vs 14 controls viewed sad/fearful vs neutral expression in MRI	Increased activation of amygdala in CD patients with increased response instead of habituation. Increased activation of periaqueductal gray (fight or freeze) and frontal lobe (Aybek et al).

Case Example

Ben is 14 y.o. year old cis male referred to the Hasbro Partial Hospital Program (HPHP) due to chronic debilitating headaches and fatigue that had interfered with his ability to attend school since November of 2019. Ben was treated for Lyme Disease with multiple rounds of antibiotics (dx non-traditionally at a Lyme treatment center) without significant improvement. In addition, he has a recently diagnosed with a FLAIR Lesion by MRI (likely c/w a benign glioma), which according to consultants (Neurology, hematology/oncology) is not felt to be related to his symptoms.

Prevalence

- 4-20% of children have medically unexplained symptoms (O'Connell, Shafran, & Bennett, 2020)
- Children with somaticizing disorder account for 10-15% of medical visits in primary care (Ibeziako et al., 2019)
- Headache most common > abd pain>musculoskeletal (Egger et al., 1999; King et al., 2011)
- Co-occurrence is common

Demographics

- Increases with age, except abdominal pain
- Females – increased frequency, duration, intensity
 - Girls may be more sensitive to pain reinforcement (Chambers, Craig, & Bennett, 2002)
- Culture – very little research
 - Can influence pain sensitivity, and expectations about pain behavior (e.g., Al-Harthy et al., 2016)
 - Culture and bias may influence our perceptions of patients' pain

Psychological/Family Correlates

- Cognitive/Stress
 - Attention regulation and arousal
 - Pain catastrophizing, pain-related fear and avoidance (e.g., Simons & Kaczynski, 2012)
 - Stressful life events and daily stressors (Walker et al., 2001).
 - Passive coping style (e.g., Campo et al., 2002; Walker et al., 2006)
 - Anxiety/depression distinguishes from healthy controls (but not organic disease) (Dufton et al., 2008 ;Walker, Garber, & Greene, 1993)
- Family Factors (e.g., Logan & Scharff, 2005)
 - Parents who see the pain as physiological vs. multi-factorial (Crushell et al., 2003)
 - Parents' pain catastrophizing → Parent emotional distress → Child disability
 - Illness behavior encouragement – attention to pain, excusing from responsibilities (Logan, Simons, & Carpino, 2012)

Pain and other Somatic Symptoms are a Biopsychosocial Experience

- Biological Site – Your symptoms are absolutely real and are physically experienced
- Psychological “Interpretation” – “No brain, no pain/numbness/dizziness....”
- Social Context – “Pain is felt where you hurt and where you are”

Things You Can Change

(Think)

(Do)

(Feel)

Cognitive

Understanding
Control
Expectations
Relevance
Pain Control Strategies

Behavior

Overt Actions
Response of Others
Physical Restraint
Physical Activities
Social Activities

Emotional

Anxiety
Fear
Frustration
Anger
Depression



Tissue Damage
Or
Pain Source



Age
Gender
Cognitive
Previous Pains
Family History
Culture



Pain Sensation
Pain Experience

Things You Can't Change

Management Considerations and Treatment

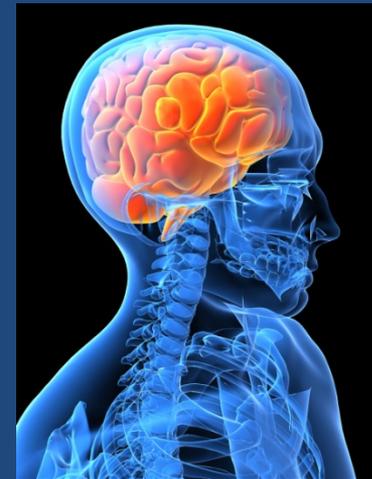
Management Considerations and Treatment

- Risk/benefit of further workup
- Efficacy of current treatment
- Importance of message
- Focus on function
- Consolidate care team
- Frequent contact with medical point person who will not escalate care unless appropriate
- CBT and treatment of co-occurring diagnoses



Treatment Challenges

- Perceived messages from previous providers
 - “The doctor said it’s in his head.”
 - “Everyone thinks she’s faking it.”
 - “They said there’s no medical cause for his symptoms.”
 - “I know my daughter’s not lying.”
- Artificial etiologic distinctions
 - “Organic vs. Inorganic”
 - “Medical vs. Psychiatric”
- Doctor shopping
- One treatment/one answer more palatable than multimodal treatment (eg, “scrambler therapy”)



Treatment Challenges (cont)

- Significant provider time commitment



- Mental health stigma

- Understanding symptoms as both “real” and stemming from emotional issues

Potential Physician Frustrations

- Perceive patients as using unnecessary resources
- Feel frustrated at patients for not accepting diagnosis
- Worry about missing something
- Worry about causing harm via further workup
- Experience conflict between teams about workup and ongoing management
- Feel frustrated about difficulty of managing in settings with limited resources

Importance of Messaging

Avoid

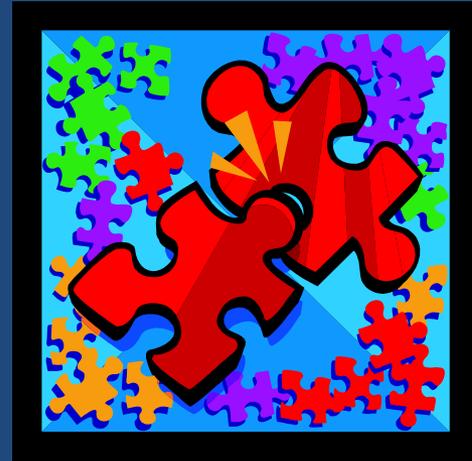
- “It’s all in your head”
- “There’s nothing we can do”
- Presenting dichotomy between emotional and physical symptoms
- Blame/shame around seeking treatment

Encourage

- Acknowledge and validate symptoms
- Emphasize that symptoms are not dangerous
- Promote understanding of emotional factors that contribute to experience of symptoms
- Express hopefulness for future function

Model for Integrative Treatment

- Centralized medical home
- Same language across providers
- Close collaboration/team meetings
- Ongoing/re-iterative psychoeducation about connection between symptoms and emotions/thoughts/behaviors
- Consistent focus on functioning in lieu of pain report
- Motivational interviewing approach
- Externalization of symptoms/disorder as an opponent to be defeated



Family Based Integrated Care

accurate/
mobilizing

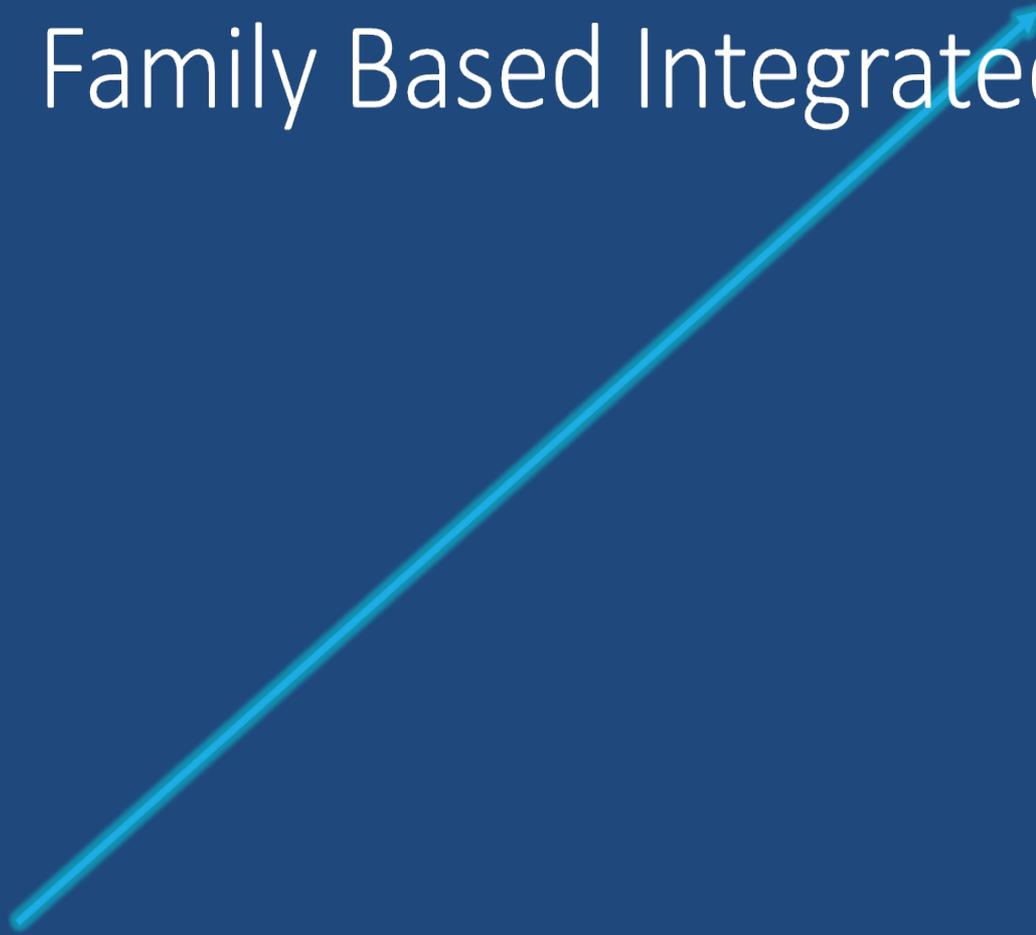
BELIEFS

distorted/
constraining

destructive/
disconnected
or painfully
connected

RELATIONSHIPS

productive/
empathically
connected



Model for Integrative Treatment: Role of Pediatrician

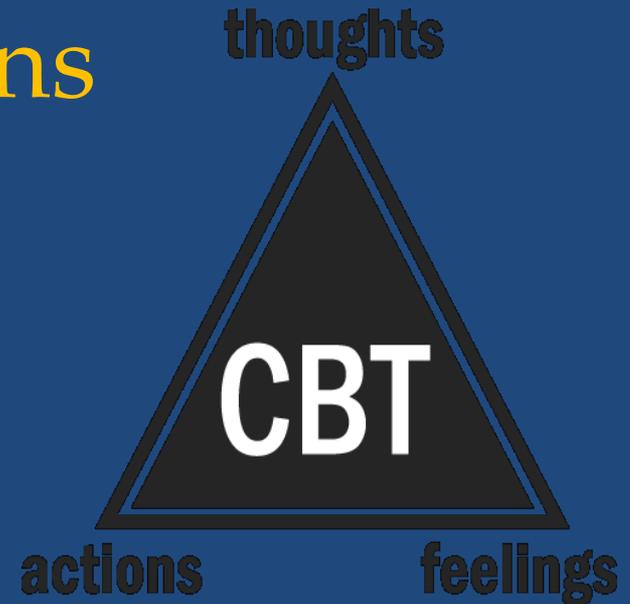
- Medical home
- Focused medical work-up
 - Avoid ordering labs related to diagnoses for which you have no clinical suspicion
 - Often helpful: Celiac screen, LFTs, ESR for abdominal pain); TSH for fatigue
 - Usually unhelpful: ANA, Lyme titers, Chem 7
- Reserve specific medical interventions for specific diagnoses (eg, avoid Zpac for nonspecific symptoms)
- Consistent language

Role for Pediatrician (cont)

- Refer for treatment simultaneous with medical workup
- Identify common psychiatric diagnoses (eg, Major Depressive Disorder, Generalized Anxiety Disorder, Social Anxiety Disorder) comorbid with somatoform illness
- Develop comfort level with common medications for anxiety and depression (eg, SSRIs)
 - Mechanism of action/expected response timeline
 - Familiarity with side effects
 - Black Box warning

Therapeutic Treatment Interventions

- CBT
- Lifestyle changes
- Increasing functioning
- Relaxation training
- Biofeedback
- Self-Hypnosis
- Acceptance and Commitment Therapy (ACT)
- Interpersonal therapy



Empirical Support for Psychological Treatment

Cochrane Review 2014

- 37 studies
- 2111 subjects
- All interventions were considered to be CBT
- Improvements in **pain & disability** for HA and non-HA



Internet-delivered: improvements in **pain** for HA and non-HA

(Eccleston et al., 2014; Fisher et al., 2015)

Take Home Messages

- Language is important
- Refer early
- Break down the “organic” vs. “inorganic” divide
- Attend to emotional and social context in assessment and treatment of all pts with pain
- Develop comfort with SSRI initiation, including Black Box warning

Additional References/Resources

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- Woolf, C.J. (2011). Central sensitization: Implications for the diagnosis and treatment of pain. Pain, 152, S2 – S15.

Additional References/Resources

- <https://www.iffgd.org/functional-gi-disorders.html>

International Foundation for Gastrointestinal Disorders

- <https://www.neurosymptoms.org/>

Self-help site run by neurologist – helpful information for patients, families, and professionals