FUNCTIONAL SOMATIC SYMPTOMS AND DISORDERS
IN CHILDREN AND ADOLESCENTS

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Agenda

• Clinical perspective
  – conceptualisation and presentation
  – classification
  – assessment and treatment

• Epidemiological research
  – developmental trajectories, early risk factors and course
Conceptualisation in recent literature & research

'The term functional is not used as a synonym for psychogenic, but instead as a way of describing a group of disorders in which there is a functional rather than structural disturbance in nervous system functioning and where a biopsychosocial model is critical in understanding their nature.'

Stone and Carson 2015
What are functional disorders?

Conditions where the child/adolescent has physical symptoms that cause excessive worry or discomfort and lead to health care contact but for which no adequate organ pathology can be found.

Fink et al 2012 (from TERM)
Functional disorders on a spectrum

The health care system is contacted

Normal physiological reaction | Temporary symptoms | Mild FSS | Functional disorders

Psychiatric classification
- Somatoform disorder
- Conversion disorder

Somatic classification
- Chronic fatigue syndrome
- Juvenile fibromyalgia
- Functional gastrointestinal disorders

Psychiatric classification
- Adjustment Disorders

Somatic classification
- Unspecific symptom diagnoses

Pervasive withdrawal/refusal

Clinical presentations

- Fatigue
- Stomach ache
- Head ache
- Muscle and joint pain
- Seizures
- Visual disturbances
- Dizziness
- Feverish feeling
- Nausea

Og many more ............
Numbers for children and adolescents???

- Best estimate: 4-10% with recurrent and disabling FSS
- Course: risk of persisting FSS but also psychiatric comorbidities, especially depression and anxiety in adulthood

**Why an important health issue?**

**Patient**
- Underlying problem is not solved
- Psychiatric disorders undiagnosed
- Risk of iatrogenic harm
- Severe disability (Smith 1986, Fink 1997, Salmon 1999)

**Doctor**
- Biomedical treatment not effective

**Health Care Resources**
- Frequent attenders, high use of investigations, medication, referrals and surgery
Explantory model

There are many causes for functional disorders
Recently it is proposed that a 
(patho)physiologic response to prolonged or severe mental and/or physical stress in genetically susceptible individuals is a possible explanation for symptom development.
Explanatory model

Vulnerability:
Biological, psychological and social heritage, social learning, previous illnesses, sexual assault

Triggering factors:
- Infection or other diseases
- Physical or psychological trauma, stress or strain
- The doctor
- "Random" findings by examination
- HPV- vaccine?

Maintaining factors:
- Dysfunctional beliefs about symptoms and illness
- Dysfunctional illness behaviour
- Hypersensitization and/or dysfunctional processing of symptoms in the CNS
- The health system
- Social and economical independence

Illness

Chronic Illness

Fink et al 2012 (from TERM)
Biological factors

- Increased symptom production
- Pathological central processing and modulation of body signals
A new classification of functional disorders
Unspecific sensitivity to bodily symptoms

Stress

Bodily distress

Autonomic arousal & HPA axis hyperactivity

Cardio-pulmonary arousal

Gastro-intestinal arousal

Muskuloskeletal tension

General stress response

1) Hot or cold sweats
2) Trembling or shaking
3) Dry mouth
4) Heart pounding
5) “Butterflies” in stomach,
6) Flushing or blushing
7) Precordial discomfort
8) Breathlessness
9) Hyperventilation

1) Bowel hyperactivity
2) Abdominal pains
3) Feeling bloated
4) Diarrhoea
5) Regurgitation
6) Constipation
7) Nausea
8) Vomiting
9) Burning in epigastrium

1) Pains in arms or legs 2) Muscular aches/pains
3) Pains in the joints
4) Localized weakness
5) Back ache
6) Pain moving around
7) Numbness/tingling

The Research Clinic for Functional Disorders and Psychosomatics
Diagnosis: Bodily distress syndrome

ICD-10:
DF 45.0 Somatization disorder
DF 45.1 Undifferentiated somatoform disorder

disorder

Diagnostic agreement:
GI-type vs irritable bowel syndrome 95 %
MS-type vs fibromyalgia 93 %
GS-type vs chronic fatigue syndrome 91 %
CP vs non-cardiac chest pain 91 %

Schröder & Fink Psychiatric Clinics of North America 2011
### Main groups of severe functional disorders

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Issue</th>
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</thead>
<tbody>
<tr>
<td>Bodily Distress Syndrome</td>
<td>The diagnosis has not been tested and validated in a child population. Properly more often monoorgan types</td>
</tr>
<tr>
<td>Health anxiety</td>
<td>Until recently thought of as an 'adult' disorder. New research indicate this is not the case. Specific diagnostic criteria for children are lacking</td>
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<tr>
<td>Dissociative conditions (conversion)</td>
<td>In DSM5 psychological causation is not longer required. ICD-11 will include functional disorders within a neurology category for the first time. Still a problem with common diagnoses across specialities</td>
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Assessment & treatment
The primary aims of assessment

• Ensure the symptoms are not due to an undiagnosed medical or psychiatric disease

• Give the patient and the family a positive and evidence-based understanding of the disorder (explain what is a functional disorder/BDS)

• Give the rationale behind and increase the acceptance of psychosocial/multidisciplinary interventions
## Elements of patient history useful in diagnosis and treatment

<table>
<thead>
<tr>
<th>Historical elements</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematic symptom screening</td>
<td>Ensure that you have elicited all physical symptoms (Consider asking about fatigue, sleep, concentration, and pain in every patient).</td>
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<tr>
<td>Day-to-day function</td>
<td>Build a picture of what the patient can and cannot do (impairment on school, family life, friends, leisure activities, distress)</td>
</tr>
<tr>
<td>Onset</td>
<td>Use a biopsychosocial framework to look for possible factors and triggers that may help you explain back a mechanism to the patient.</td>
</tr>
<tr>
<td>Illness beliefs</td>
<td>What the patient/family thinks may be wrong? Whether doctors have missed something? If it is possible the symptoms could improve? What treatments would be helpful?</td>
</tr>
<tr>
<td>Experience with other doctors</td>
<td>Enquire about the outcome of visits with other doctors. Allow the patient to vent their frustration if relevant.</td>
</tr>
</tbody>
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Modified after Stone et al. 2015
**Helps:**
Physical training (graded exercise)
Cognitive behavioural therapy
Medicine affecting the brain (TCA, SSRI – obs only shown for adults!)

**Helps not:**
More investigations
Operation, massage
Medicine affecting joints and muscles.
1. Mild or transient functional disorders
   Management in primary care.
   Key principles: Normalisation, explanation, advice
   Follow-up of at-risk patients.

2. Moderate, uncomplicated functional disorders
   Management in primary care or paediatric setting.
   Follow-up consultations.

3. Moderate functional disorders, comorbidity
   Management in paediatric setting
   if appropriate, in collaboration with mental health specialist,
   (assessment, treatment plan and supervision)

4. Severe functional disorders
   Management at in specialised unit.
   Rehabilitation (multi-disciplinary) and psychotherapy
   Consider pharmacological treatment (e.g. SSRI if comorbid anxiety/depression).

Inspired by model presented in Schröder and Fink 2011
RCT at our clinic:
120 adolescents with severe functional disorders

**Inclusion criteria**

- FSS - severe multi-organ Bodily Distress Syndrome (BDS)
- At least 12 months duration
- 15-19 years old
- Significant impairment

**Exclusion criteria**

- No informed consent.
- An acute psychiatric disorder demanding other treatment, or if the patient is suicidal.
- A lifetime diagnosis of psychosis, mania or depression with psychotic symptoms, serious cognitive deficits or developmental disorders such as mental retardation and autism
- Abuse of narcotics, alcohol or medicine
- Pregnancy at the time of inclusion
- Not fit for group based treatment, e.g. patients with severe ADHD, severe social phobia or conduct disorder
Epidemiological research
Developmental trajectories, course and risk factors of functional somatic symptoms (FSS)
synthesis of findings from two large epidemiological studies

CCC2000
The Danish ‘Copenhagen Child Cohort 2000’

TRAILS
The Dutch ‘Tracking Adolescents’ Individual Lives Survey’
Overall designs

CCC2000
N=6090

CC1 & 2
Psychopathology
Health nurse assessments

CC 3
Psychopathology
FSS & health anxiety

CC 4
Psychopathology
Physical examination
FSS & health anxiety

CC 5 (In preparation)
Mental health
Physiological stress responses
FSS clusters & health anxiety

TRAILS
N=2230

0 1½ 5-7 11-12 16-17 yrs

11 13 16 19 22 yrs

T1 Mental & physical health FSS
T2 Mental & physical health FSS
T3 Mental & physical health Genetic samples & biomarkers FSS
T4 Mental & physical health FSS & Health anxiety
T5 Mental & physical health FSS & Functional syndromes

Summary: CCC2000 findings

FSS are common in early childhood (5-7 yrs) and in a subgroup associated with:

- considerable impairment (4.4 %)
- other problems including emotional problems, eating problems and health anxiety symptoms
- higher use of health care resources
- Are functional disorders a lifespan developmental disorder(s) ?
- potential early risk factors: infancy regulatory problems and maternal psychiatric distress/illness
Summary: TRAILS findings

FSS in adolescents:

- May partly be triggered by sedentary life style and perpetuated by school absenteeism
- Are more likely to occur in young people of female gender, with emotional (depressive) symptoms, poor self-perceived health and low intelligence
- Potential important parental factors may be overprotection and high expectations
- Are associated with cortisol stress responses and pubertal stage in a symptom-specific way

Should the explanatory model for FSS include both a splitting and lumping approach?
**Synthesis of findings**

**Acquired vulnerability**
Maternal psychiatric disorders (early child stress?)
Parental symptom concern/overprotection/high expectations
Child anxiety and depression/eating problems

**Inherited vulnerability**
IQ & gender
Early regulation problems (marker of emotional liability?)

**Developmental process**
*FSS*

**Maintaining factors**
- High use of health care
- Parental overinvolvement
- Sedentary lifestyle
- Depression/anxiety
- School abseentism

*Symptom-specific process* influenced by individual differences in biological factors: physiological arousal/stress reactivity and late pubertal development.
Future directions

Further explore

- clustering of symptoms and delimitation of significant FSS at different age points
- FSS occurrence and distribution in sex, age, and socioeconomic groups
- possible risk factors (modifiable and non-modifiable) based on a comprehensive theoretical causal model including the role of stress/strain
- individual and societal consequences and course of the symptoms (remission, stability, exacerbation) and later development of physical and mental diseases

Development of

- evidence-based treatment
- stepped care treatment models
More information….

- Our research project on group-based ACT for adolescents (age 15-19 yrs) with severe functional disorders
  [http://www.funktionellelidelser.dk](http://www.funktionellelidelser.dk)

- Our short education in ACT therapy for functional disorders
  [http://www.funktionellelidelser.dk](http://www.funktionellelidelser.dk)

- TERM=The Extended Reattribution and Management Model
  - (2. udg. 2012: Funktionelle lidelser, Munksgaard)

- DSAM: clinical guidelines (2013)

- Patient booklet: 'When the body says stops'