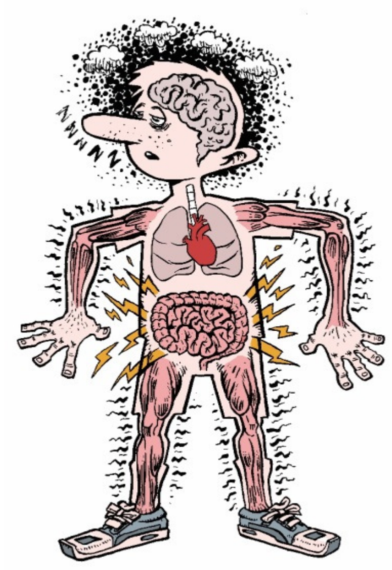
Functional Disorders in Children and Adolescents

Conceptualization and presentation of treatment principles used in the Danish AHEAD trial



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Outline

- Definition and typical clinical presentations of functional disorders
- Information for families - a generic explanatory model
- Rationale for Acceptance and Commitment Therapy:
  - illustrated by results from the Danish AHEAD trial

Definition

Functional disorders are characterized by persistent somatic symptoms with associated impairment or disability

The symptoms have typical clinical patterns but cannot be detected by ordinary blood tests, x-ray or other medical tests

Burton, P et al. BMC Med. 2020

Prevalence and impact in youth

- Prevalence 4-10% [1-4]
- Psychiatric comorbidities common [5-8]
- High absence from school [9]
- Social withdrawal [10]
- Low quality of life [11]
- Risk of continuity [1,12,13]
- Limited specialized treatment

[1]Janssens et al. 2014
[2]Hoftun et al. 2008
[3]Lamers et al. 2013
[4]Garralda et al. 2015
[5]Campo et al. 2004
[6]Garralda et al. 1999
[7]Harma et al. 2002
[8]O'Connel et al. 2019
[9]Eminson et al. 2007
[10]Roth-Isigkeit et al. 2005
[11]Meldrum et al. 2009
[12]Horst et al. 2014
[13]Janssens et al. 2011

Symptoms tend to cluster according to organ systems

Gastrointestinal	Cardiopulmonal (including autonomic symptoms)
Abdominal pain Nausea Frequent loose bowel movements Diarrhoea Feeling bloated Regurgitations Burning sensation in chest Constipation Vomiting	Palpitations/heart pounding Hot or cold sweats Breathlessness without exertion Hyperventilation Dry mouth Trembling/shaking Churning in stomach Flushing or blushing Precordial discomfort
Musculoskeletal	**General symptoms**
Muscular ache or pain Pain in the joints Feeling of paresis or localized weakness Back ache Pain moving from one place to another Unpleasant numbness or tingling sensations Pain in arms or legs	Headache Concentration difficulties Impairment of memory Excessive fatigue Dizziness

Important to remember

‘Functional disorder’ is NOT a diagnosis in the current international classification systems - it is an umbrella term....

PSYCHIATRIC SETTING

DSM-5: Somatic symptom disorder/ Functional neurological symptom disorder (Conversion disorder)
ICD-10: Somatoform disorders/Dissociative disorders
ICD-11: Bodily distress disorder/Dissociative neurological symptom disorders

SOMATIC SETTING

Various **functional somatic syndromes**, e.g.:
Irritable bowel syndrome (IBS)
Fibromyalgia
Atypical or non-cardiac chest pain
Chronic fatigue syndrome (CFS, ME)
Tension headaches
ICD-11: Diseases of the nervous system, e.g. **functional dystonia or spams**

New diagnostic ICD-10 codes in Denmark

- DR688A9A - Functional disorder, multi-organ
- DR688A9B - Functional disorder, single-organ
  - DR688A9B3 - musculoskeletal
  - DR688A9B2 - gastrointestinal
  - DR688A9B6 - urogenital
  - DR688A9B4 - cardiopulmonal
  - DR688A9B5 - neurological
  - DR688A9B1 - general/fatigue
  - DR688A9BX - other single-organ
- DR688A9C - Functional disorder, single symptom

Information for families

- a generic explanatory model

INFORMATION ABOUT FUNCTIONAL DISORDERS

When the body says stop

The are many causes for functional disorders.

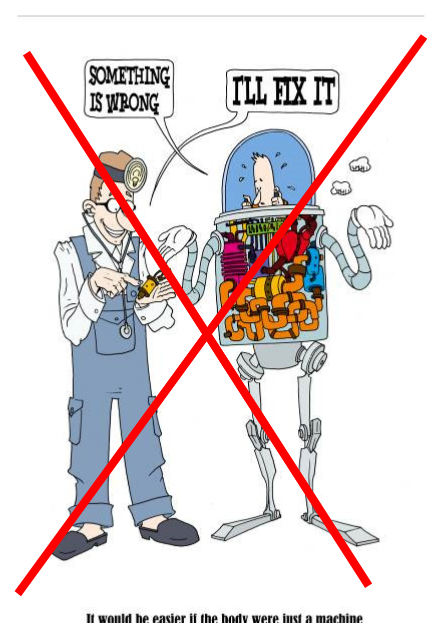
☼ The Danish Committee for Health Education

Recent understanding

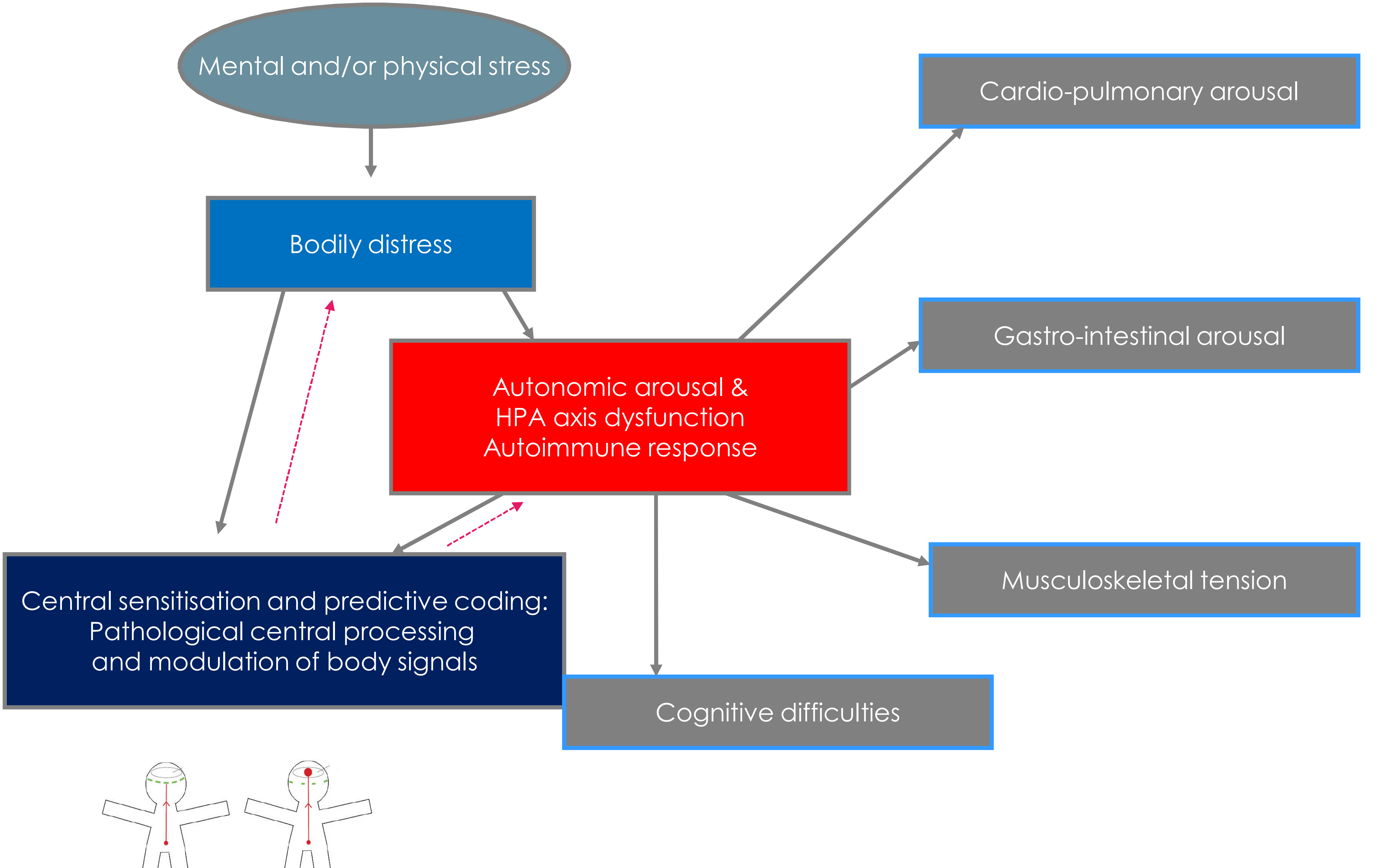
The development of functional disorders is based on a

(patho)physiologic response to prolonged or severe mental and/or physical stress

in genetically susceptible individuals



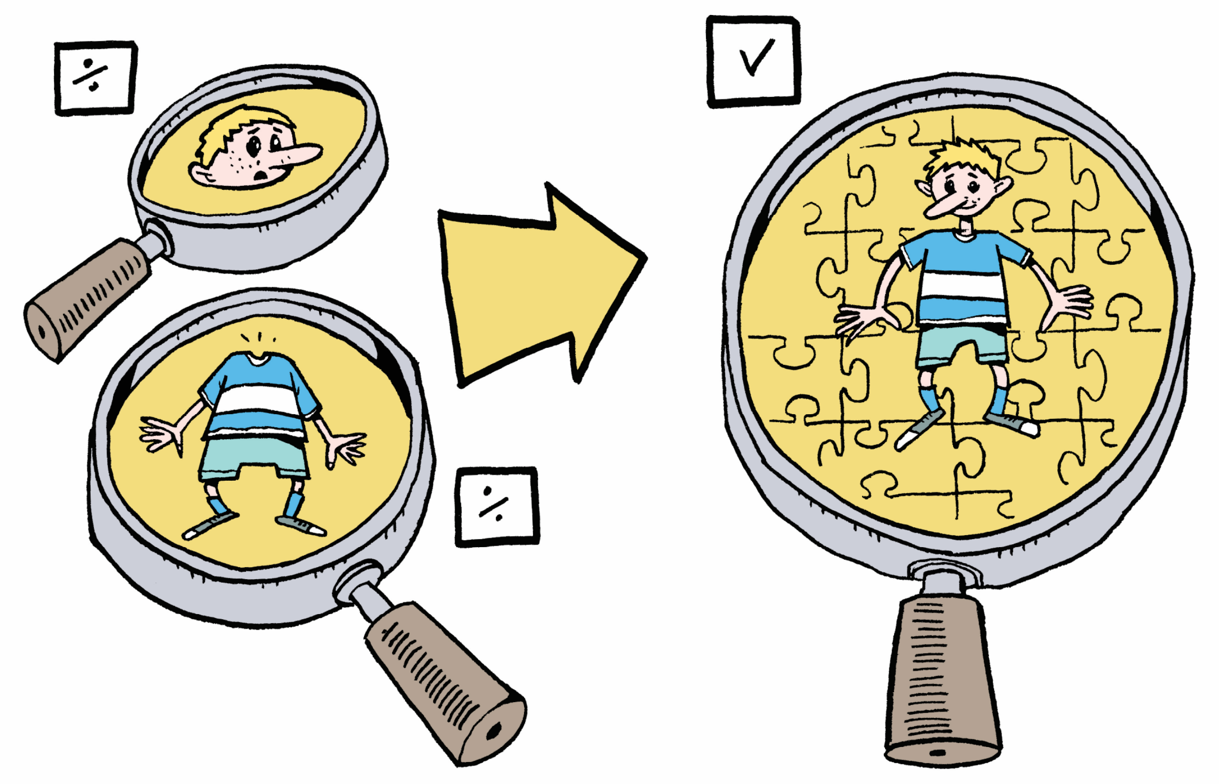
It would be easier if the body were just a machine



Kozlowska, 2013; Janssens et al 2012; Boakye et al 2015; Walker et al 2012; Wyller et al 2007 & 2008

Goodbye to "body-mind dualism"

Either physical or mental

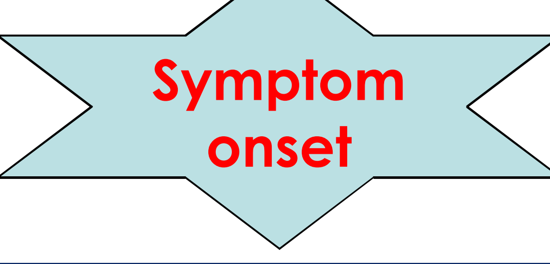


Biopsychosocial approach

Biopsychosocial framework

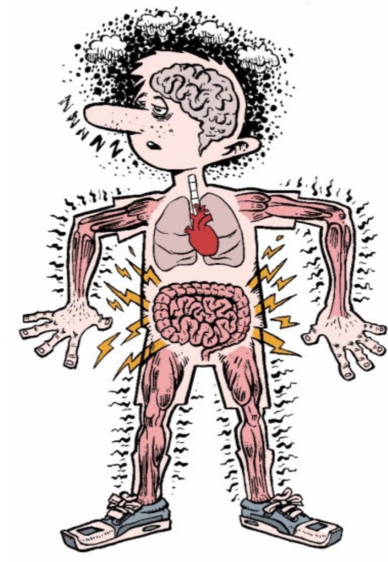
Vulnerability
Functional disorders in the family
Anxious, perfectionistic personality traits
Longstanding stress

Triggers
Infection or a physical trauma
Emotional trauma like death of a parent or abuse
Iatrogenic with misinterpretation of normal medical results



Perpetuation
Maladaptive family illness beliefs and behaviors
Unnecessary medical examinations
Ineffective treatment
CNS sensibilization and dysregulation in stress system

Chronic bodily distress
with persistent functional somatic symptoms



The body becomes 'noisy' and hypersensitive

Rask et al., IACAPAP book chapter:
"Understanding Uniqueness and Diversity in Child and Adolescent Mental Health" 2018

Illness perceptions

★ Beliefs about illness or symptoms [1]

Examples of negative illness perceptions associated with functional disorders: [2]

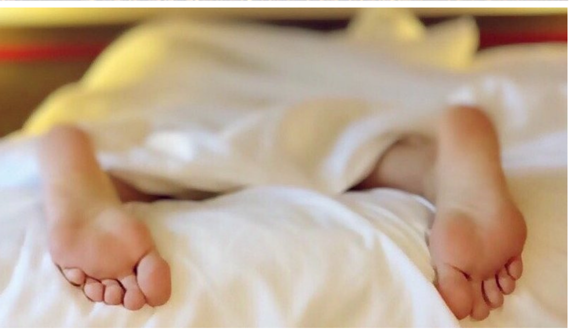
"My symptoms will continue forever – I'll never get well"

"I cannot do anything to change my symptoms"

"All my symptoms are caused by the accident"

[1] Broadbent et al. 2006; Leventhal et al. 2016
[2] Hulgaard et al. 2020; Loades et al. 2018; Haines et al. 2019; Christensen et al. 2015; Chilcot et al. 2013; Spence et al. 2005

Illness behaviors



★ Behavioral response to symptoms and illness[1]

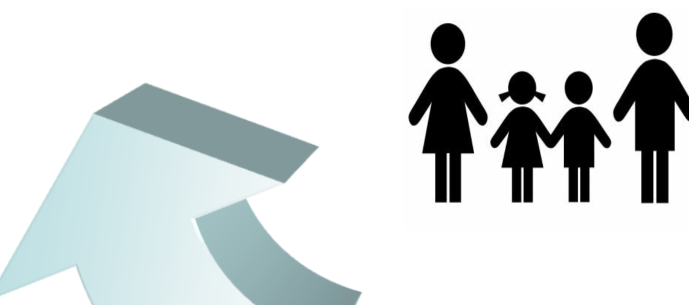
Examples of maladaptive illness behaviors[2]

All-or-nothing behavior

Avoidance behavior

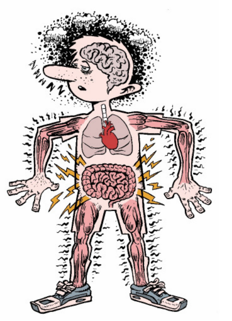
[1] Sirri et al. 2013; Spence et al. 2005
[2] Spence et al. 2005; Chalder et al. 2015; Rief et al. 2017; Sullivan et al. 2019

The vicious circle of maladaptive family illness beliefs and behaviors



Rationale for Acceptance and Commitment Therapy

- Psychological treatment can reduce symptom load and disability[1]
- Promising effect of third wave treatments like Acceptance and Commitment Therapy (ACT)[2]
- Studies in youth have focused on single symptom or organ presentation potentially overlooking those with multi-organ disorders where a generic approach would be useful[3]



[1] Fisher et al. 2018; Bonvanie et al. 2017
[2] Wicksell et al. 2009, Frostholm et al. 2019
[3] Kangas et al. 2020; Bonvanie et al. 2017

What is Acceptance and Commitment Therapy?

- An acceptance based cognitive-behavioral therapy[1]
- Aims to increase psychological flexibility
- Values guide and motivate behavioral change

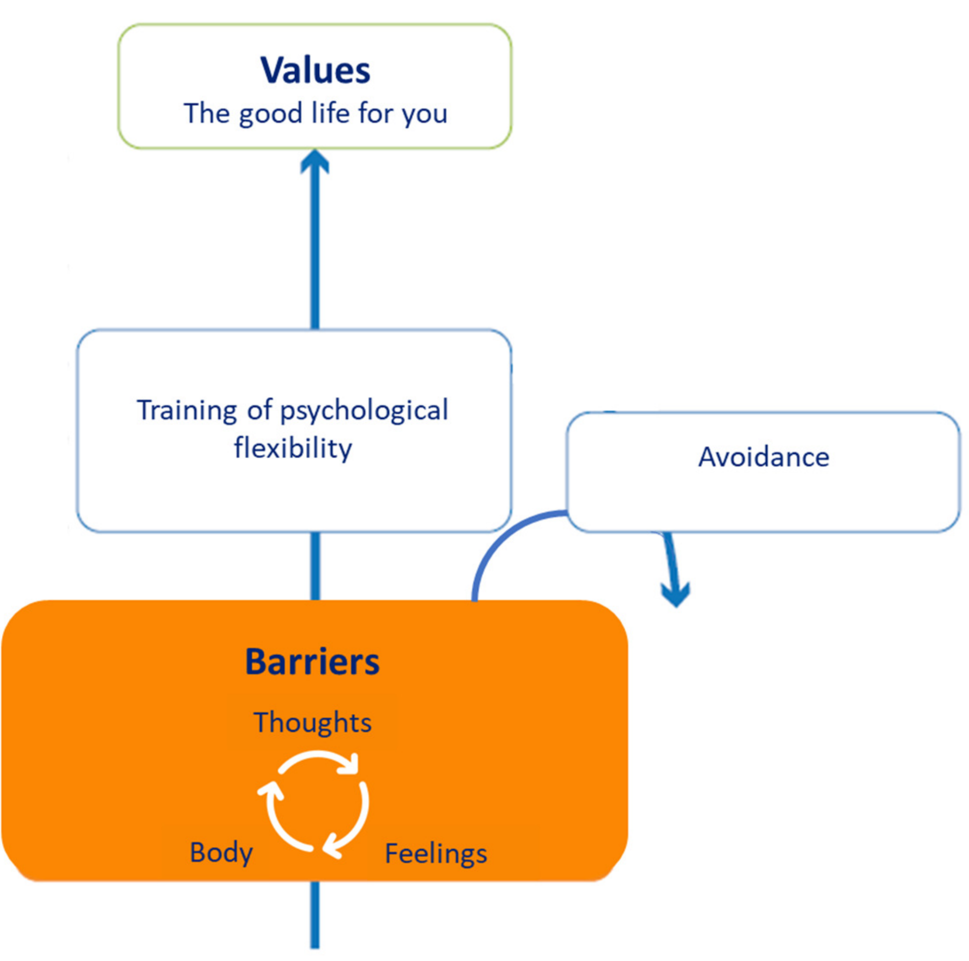
[1] Hayes et al. 2012

Treatment focus

Poses two essential questions:

1. What do you want your life to be about (values)?

2. What might stop you in leading this life (barriers)?



Kallesøe and Rask. From bookchapter in “Cognitive Behavioral Therapy with children, adolescents and families” (Danish), 2018

ACT for Health in Adolescents (AHEAD)

Group treatment for adolescents aged 15-19 years:

- 9 modules (27 hours) and 1 follow-up meeting (3 hours) + homework
- 1 individual consultation with close relatives
- Manualized

Involvement of close relatives:

- Assessment
- Information meeting
- Individual consultation

Treatment content:

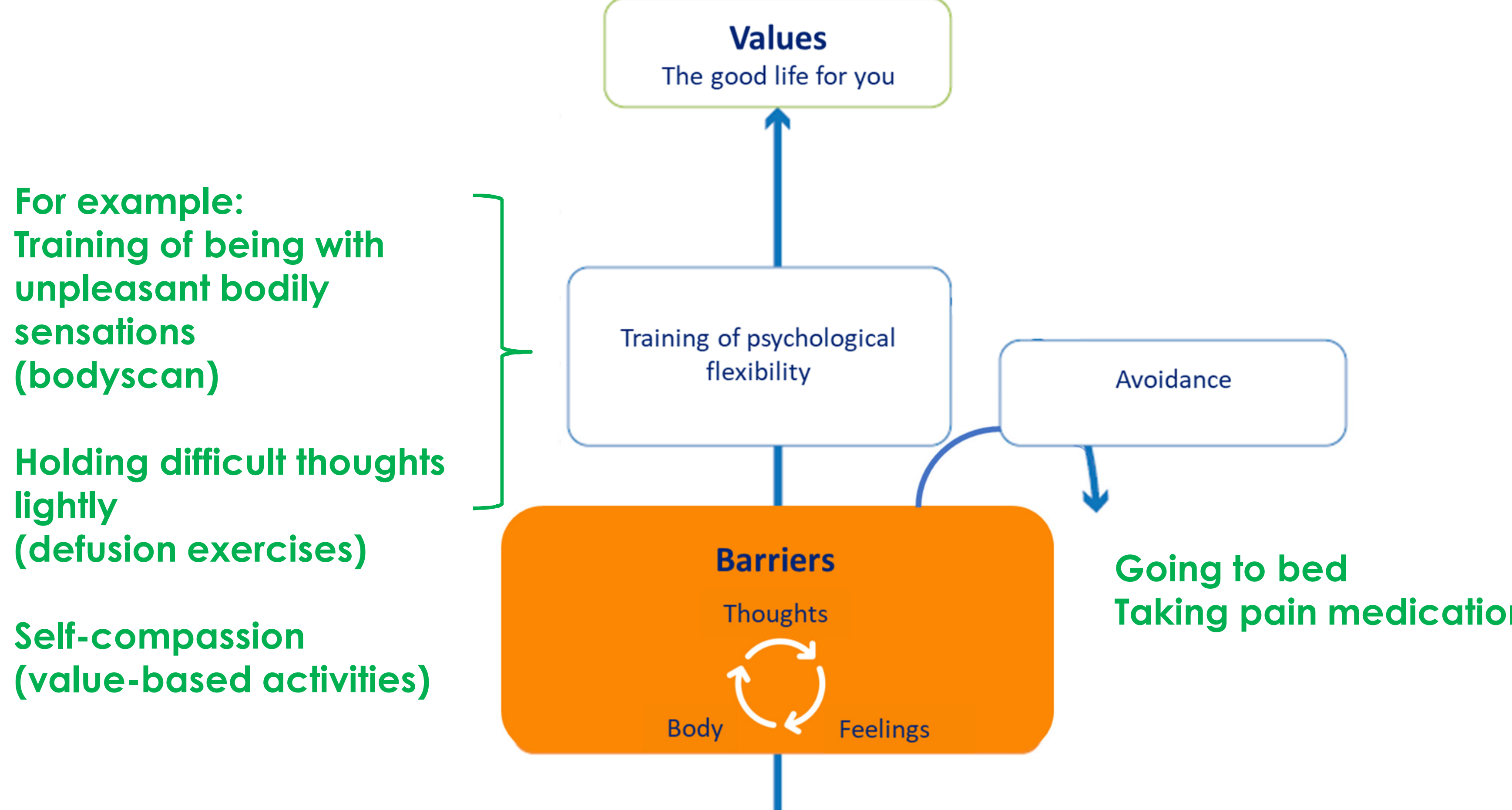
- Further psychoeducation regarding functional disorders
- Identification of values and barriers
- Value-based gradual exposure
- Training of psychological flexibility

Kallesøe et al. BMC Psychiatry (2020) 20:457
https://doi.org/10.1186/s12888-020-02862-z
BMC Psychiatry
RESEARCH ARTICLE Open Access

Feasibility of group-based acceptance and commitment therapy for adolescents (AHEAD) with multiple functional somatic syndromes: a pilot study

Karen Hansen Kallesøe[1,2*], Andreas Schröder[1,2], Rikard K. Wicksell[3], Tua Preuss[1], Jens Søndergaard Jensen[1] and Charlotte Ulrikka Rask[2,4]

Training psychological flexibility



Kallesøe and Rask. From bookchapter in “Cognitive Behavioral Therapy with children, adolescents and families” 2018

Study design: AHEAD

Control condition: EUC

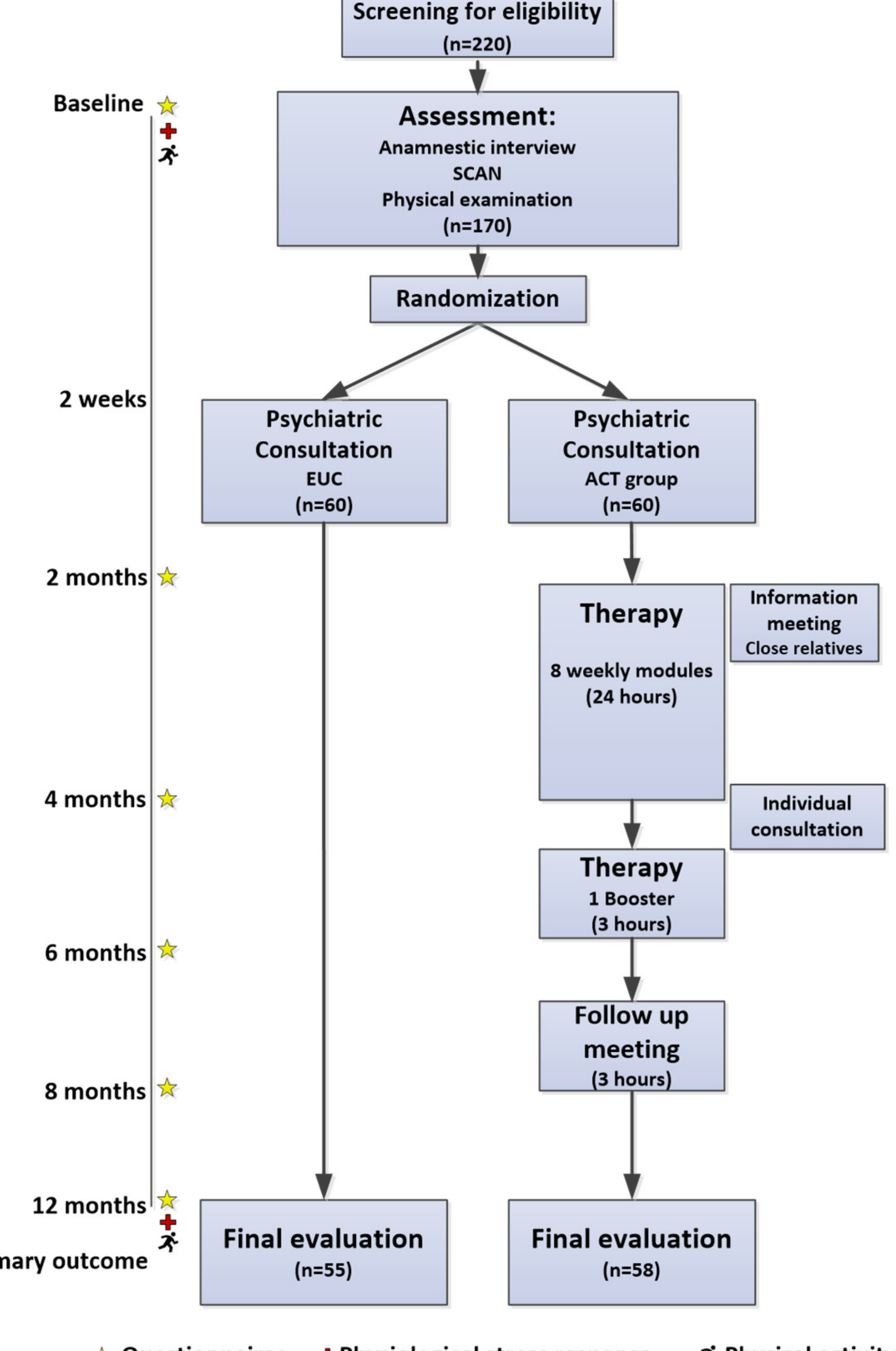
- Further psychoeducation
- Health promoting strategies
- Individual treatment plan to the general practitioner
- Allowed and expected to receive other treatment

Open Access Protocol

BMJ Open

Comparing group-based acceptance and commitment therapy (ACT) with enhanced usual care for adolescents with functional somatic syndromes: a study protocol for a randomised trial

Karen Hansen Kallesøe,[1] Andreas Schröder,[1] Rikard K Wicksell,[2] Per Fink,[1] Eva Ørnbøl,[1] Charlotte Ulrikka Rask[1,3]



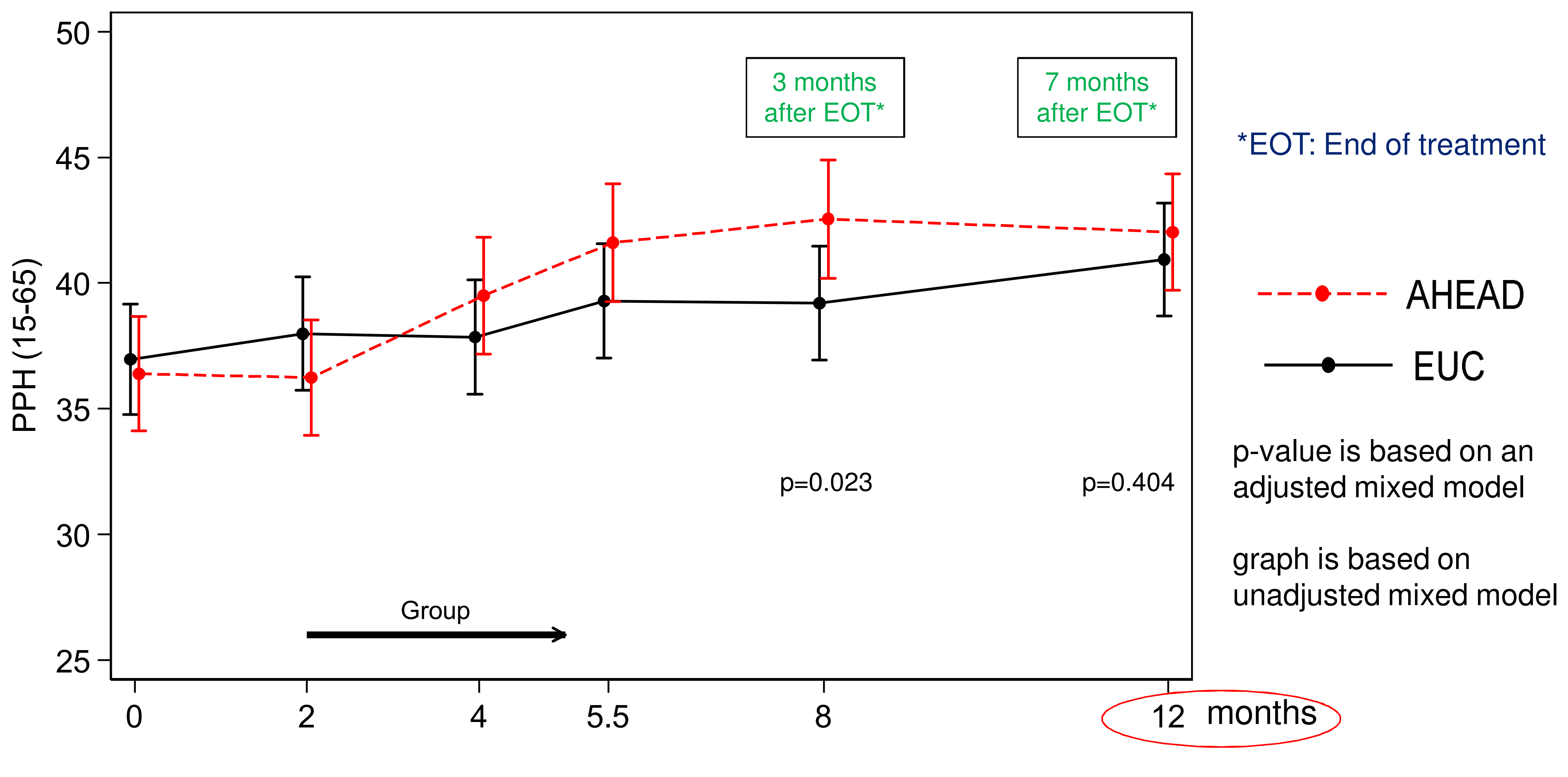
Baseline characteristics of participants (N=91)

	AHEAD (n=44)	EUC (n=47)
Age at inclusion, years*	18.1 (1.5)	17.7 (1.5)
Gender, female n (%)	40 (90.9%)	42 (89.4%)
Symptom duration, years*	4.3 (2.4)	3.5 (1.7)
Physical Health Aggregate Score* (15-65)	36.6 (5.8)	37.1 (7.8)
Symptom score SCL-somatization* (0-4)	2.0 (0.7)	1.8 (0.8)
Limitation due to symptoms*[6] (0-36)	24.7 (7.0)	24.1 (8.0)
Psychiatric comorbidity total, n (%):	20 (45.5%)	20 (42.6%)
Clinician-rated impairment n (%):		
Moderate	11 (25.0%)	14 (29.8%)
Severe	33 (75.0%)	33 (70.2%)

*Mean, SD

Inclusion January 2015 to December 2018

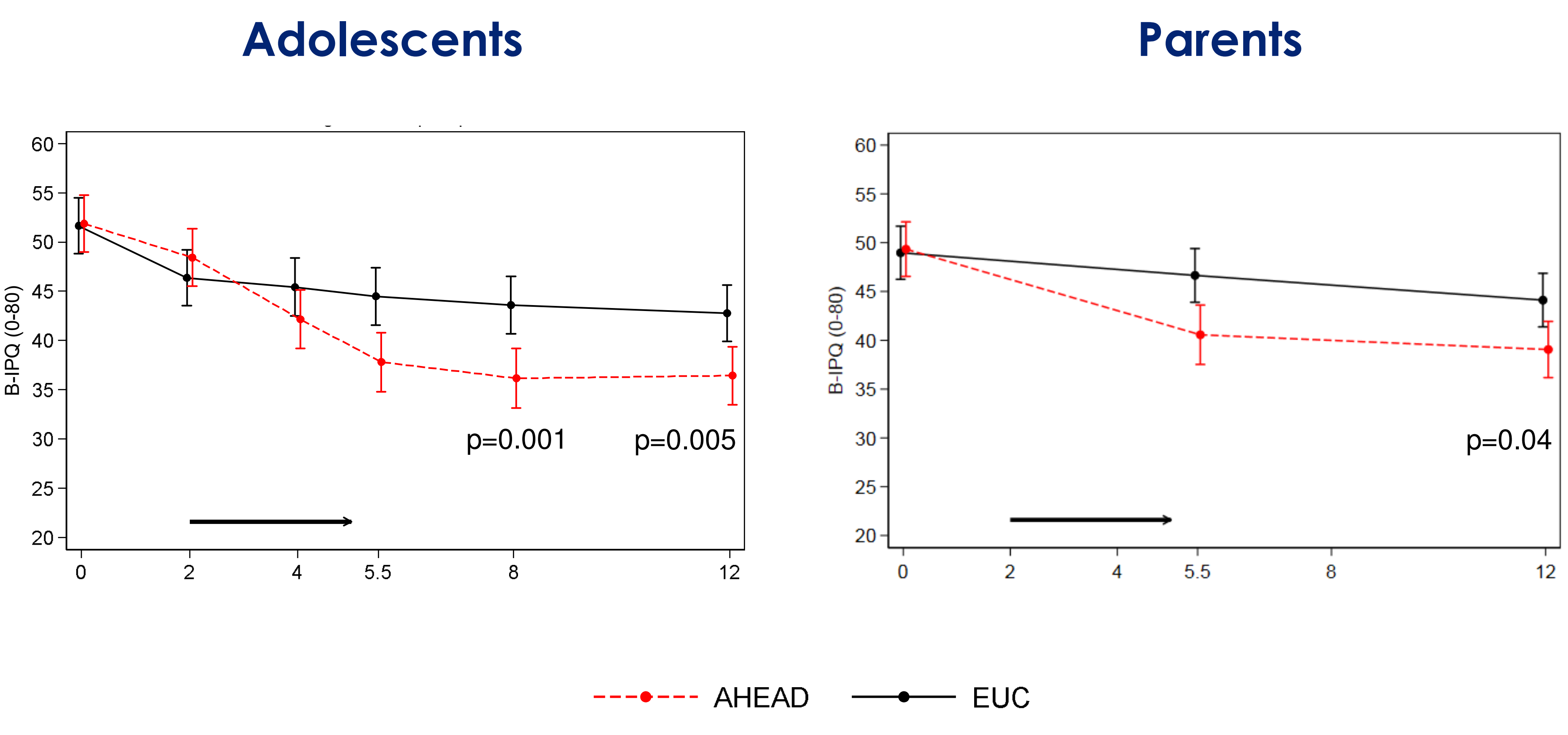
Effects of AHEAD on physical health



	5.5 months		8 months		12 months	
Improvement:	AHEAD	EUC	AHEAD	EUC	AHEAD	EUC
	5.2 CI (3.2;7.2)	2.3 CI (0.4;4.3)	6.2 CI (4.1;8.2)	2.2 CI (0.3;4.2)	5.6 CI (3.7;7.6)	4.0 CI (2.1;5.9)

Effects of AHEAD on negative illness perceptions

"My (or my child's) symptoms will continue forever"



Taking a closer look at the data

Additional treatment

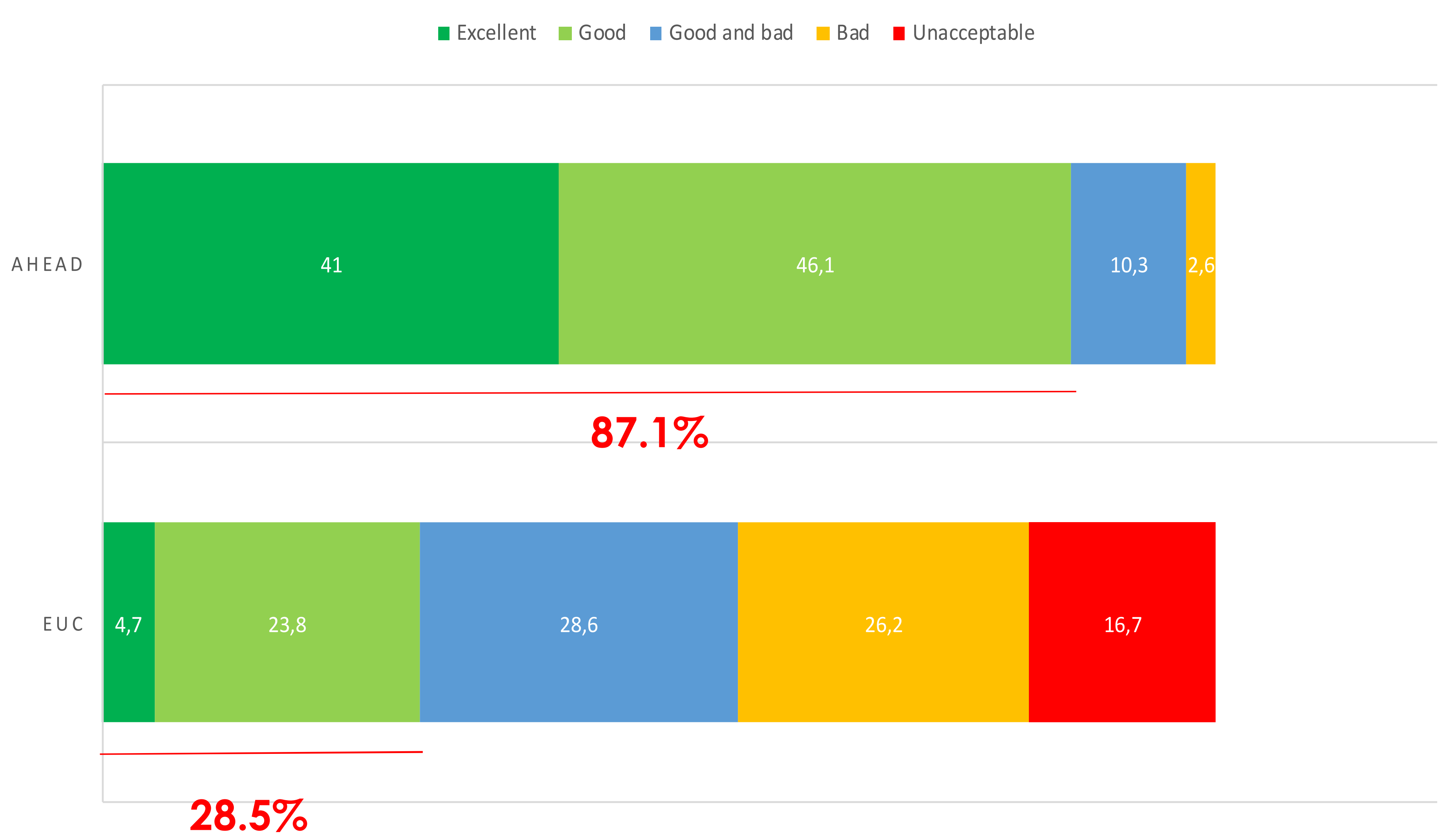
12 months

Treatment	AHEAD	EUC	p-value*
Psychological n (%), median [IQR]	8 (19·0%); 4 hrs [3;8]	27 (61·4%); 15 hrs. [8;25]	0·001 <0·001
Physiotherapy n (%), median [IQR]	9 (22·0%); 6 hrs. [5;10]	21 (47·7%); 4 hrs. [2;12]	0·049 0·033
Alternative treatment* (e.g. acupuncture, cranio sacral therapy) n (%)	11 (26·2%)	21 (47·7%)	0·048
Social intervention from social services n (%)	3 (7·1%)	7 (15·9%)	0·219
Pharmacological treatment:			
Pain medication, over-the-counter (e.g. paracetamol, ibuprofen)	2 (5·0%)	11 (25·0%)	0·013
Pain medication, prescription (e.g. opioids or cannabidiol)	0 (0·0%)	3 (6·8%)	0·088
Relief of abdominal symptoms (e.g. antacid, emetics and laxatives)	3 (7·5%)	8 (18·2%)	0·159
Antidepressants	7 (17·5%)	7 (15·9%)	0·809
Sleeping aid (e.g. sedatives, antipsychotics)	0 (0·0%)	4 (9·1%)	0·048

*p-value for difference is tested with X^2 for percentages and Wilcoxons ranksum test for hours

Treatment satisfaction

at end of treatment



Adolescents' evaluations of treatment

Overall conclusions

- It is feasible for adolescents with multiple severe symptoms to be treated together in a generic treatment format based on ACT principles
- AHEAD and EUC both displayed clinically relevant improvement on physical health at 12 months but with a faster improvement in AHEAD
- AHEAD was associated with high treatment adherence and patient satisfaction

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Group-based Acceptance and Commitment Therapy (AHEAD) for adolescents with multiple functional somatic syndromes: A randomised trial

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