

# Should we be treating temperament instead of anxiety and depression?

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# COI Disclosure

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# DSM IV

## Anxiety and Mood Disorders

- Substantial phenotypic overlap
- High comorbidity
- Necessity of NOS diagnoses (mostly GAD)
- Subthreshold presentations (mostly OCD, MAD & SAD)

## DSM IV

- “Zenith of splitting” (reliably identified but narrow slices of psychopathology)

## DSM-5

- “Return to lumping” (based on the deepening knowledge of underlying dimensions of psychopathology and supporting brain circuitry)

# Anxiety Disorders

Separation Anxiety Disorder

Selective Mutism

Panic Disorder

Agoraphobia

Specific Phobia

Social Anxiety Disorder (Social Phobia)

Generalized Anxiety Disorder

Substance-Induced Anxiety Disorder

Anxiety Disorder Attributable to Another Medical  
Condition

Anxiety Disorder Not Elsewhere Classified

Panic Attack

# Obsessive-Compulsive and Related Disorders

Obsessive-Compulsive Disorder

Body Dysmorphic Disorder

Hoarding Disorder

Trichotillomania (Hair-Pulling) Disorder

Excoriation (Skin-Picking) Disorder

Substance-Induced Obsessive-

Compulsive, or Related Disorders

Obsessive-Compulsive, or Related Disorder

Attributable to Another Medical Condition

Obsessive-Compulsive, or Related Disorder

Not Elsewhere Classified

# Trauma- and Stressor-related Disorders

Reactive Attachment Disorder

Disinhibited Social Engagement Disorder

Acute Stress Disorder

Post-traumatic Stress Disorder

Adjustment Disorders

Trauma- or Stressor- Related Disorder Not  
Elsewhere Classified

# Higher Order Dimensions: (Temperaments)

- Neuroticism: (Introversion) – Eysenck
- Behavioral Inhibition System: Behavioral Activation System (BIS-BAS) – Gray
- Behavioral Inhibition – Kagan
- Negative Affect: Positive affect (NA-PA) --Tellegen, Clark, Watson
- Trait anxiety –(Barlow, 1988; Cattell, 1963)

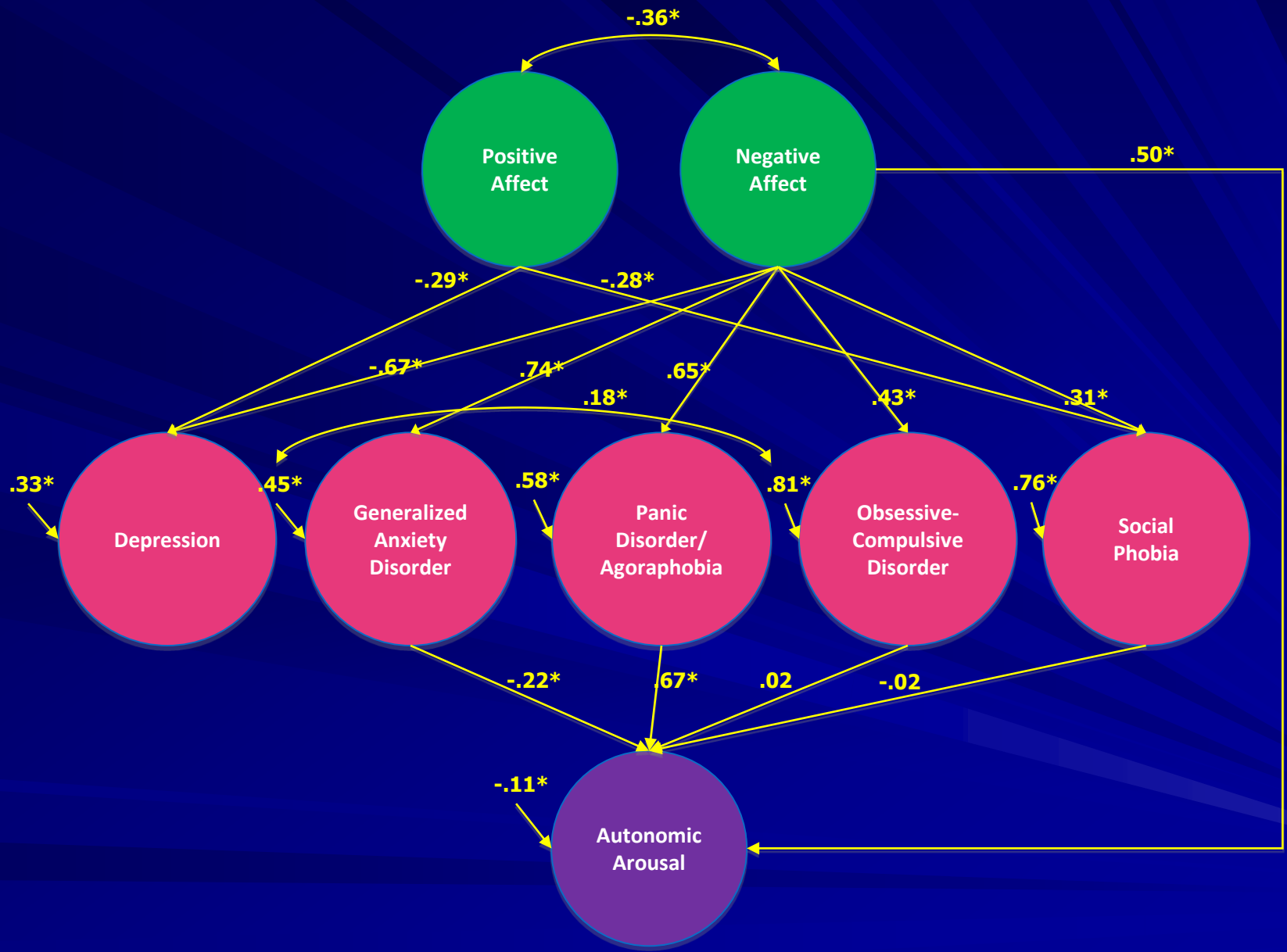


# Higher Order Dimensions: (Temperaments)

- Trait Anxiety /Neuroticism / Behavioral Inhibition
- Behavioral activation / Positive Affect

# Neuroticism

- Tendency to experience frequent, intense negative emotions (e.g. anxiety, depression, anger and irritability) associated with a sense of uncontrollability (the perception of inadequate coping) in response to stress.

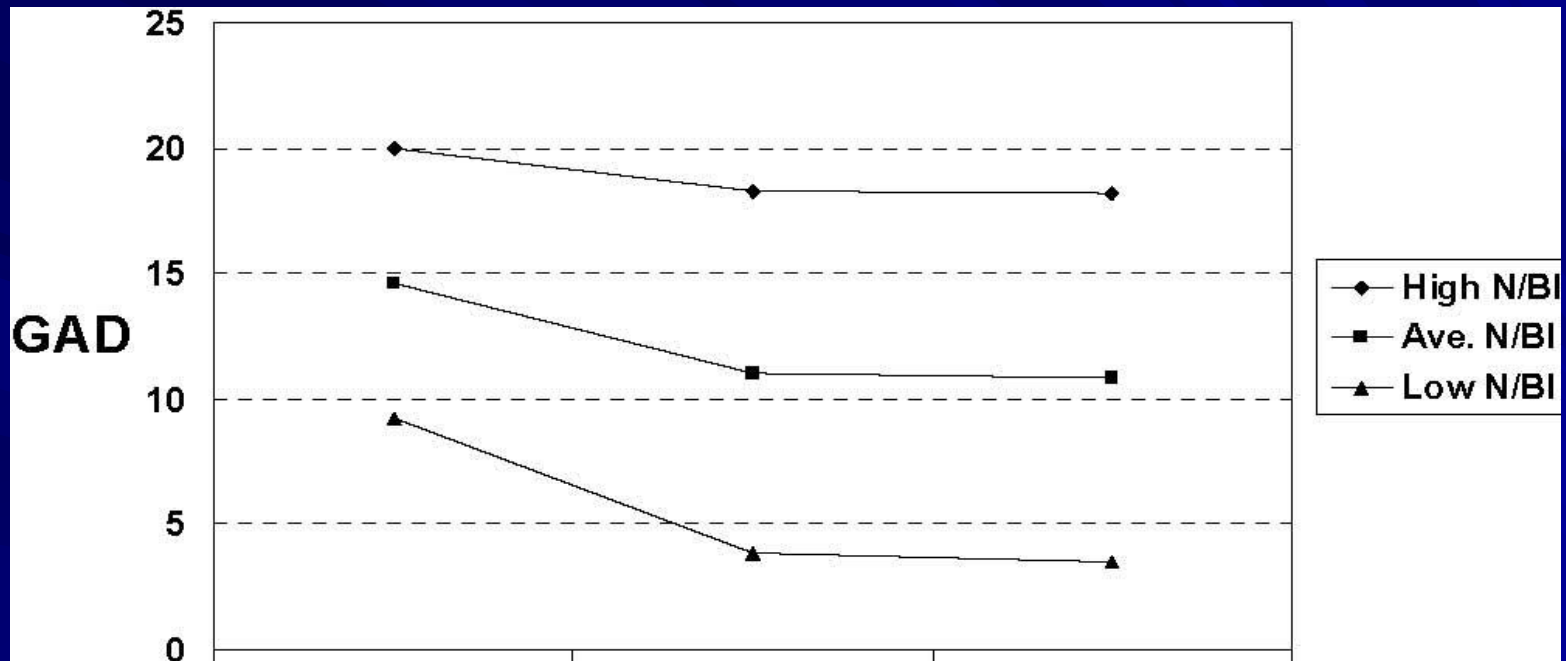


Brown, T. A., Chorpita, B. F., & Barlow, D. H., 1998.

# Temporal Course of Temperamental Dimensions

- N = 606
- 75% treated at CARD
  - followed for 2 years whether treated or not.
- Principal DX: Unipolar Mood, GAD, Social Anxiety
- Broad patterns of comorbidity

# Generalized Anxiety Disorder



Model-Implied Trajectories of *DSM-IV* Disorder Constructs as a Function of Neuroticism/Behavioral Inhibition. *Note.* N/BI = Neuroticism/Behavioral Inhibition. (N=606).

# Some results and future questions

Largest effect size for N/BI

Disorder effect sizes intermediate

More severe N/BI is associated with smaller tx effects

Do changes in N/BI mediate overall change?

# Origins of Trait Anxiety/Neuroticism

## Triple Vulnerability Theory

# Independent Vulnerabilities

## Biological Vulnerability

(heritable contribution to negative affect)

- "Glass is half empty"
- Irritable
- Driven

## Generalized Psychological Vulnerability

(sense that events are uncontrollable/unpredictable)

- Tendency towards lack of self-confidence
- Low self-esteem
- Inability to cope

## Specific Psychological Vulnerability

(e.g., physical sensations are potentially dangerous)

- Hypochondriac?
- Nonclinical panic?



# Generalized Biological Vulnerability

# Polygenic Model of Vulnerability

- “Gene discovery... is, on its own, unlikely to allow us to carve nature at its joints.”

(Kendler, 2006)

- “Susceptibility genes... represent particular allelic variations of common genes.”

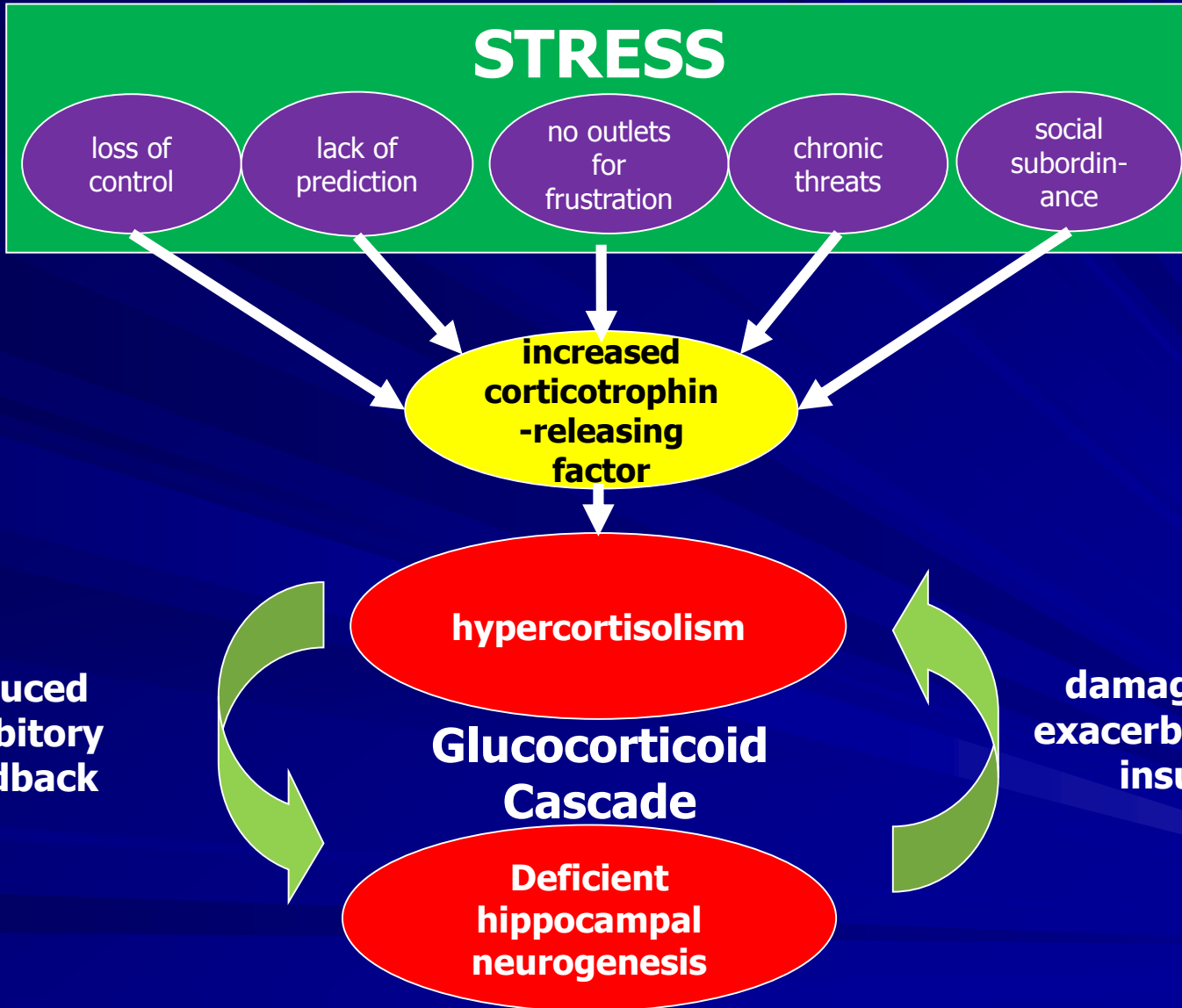
(Rutter, Moffitt, & Caspi, 2006)

- Heightened reactivity in emotion generating structures (amygdala hyperexcitability)

# Generalized Psychological Vulnerability

# Generalized Psychological Vulnerability

- Early disruptive experiences produce a (permanent) sense (schema) of unpredictability, uncontrollability, and an inability to cope with potentially threatening events through a process of sensitization and kindling. *“Experimental Neurosis” – Pavlov, Masserman, Liddell (Mineka & Kihlstrom, 1978).*
- These experiences are associated with stable change in brain structure and function, including gene expression. *(Sapolsky 2007; Gillespie & Nemeroff, 2007; Spinelli, Chefer, Suomi, Higley, Barr, & Stein, 2009.)*
- Disruptive early experiences are not restricted to early trauma – other experiences such as certain parenting styles induce diminished sense of personal control. *(Chorpita & Barlow, 1998.)*
- Consequence is not any one specific disorder.



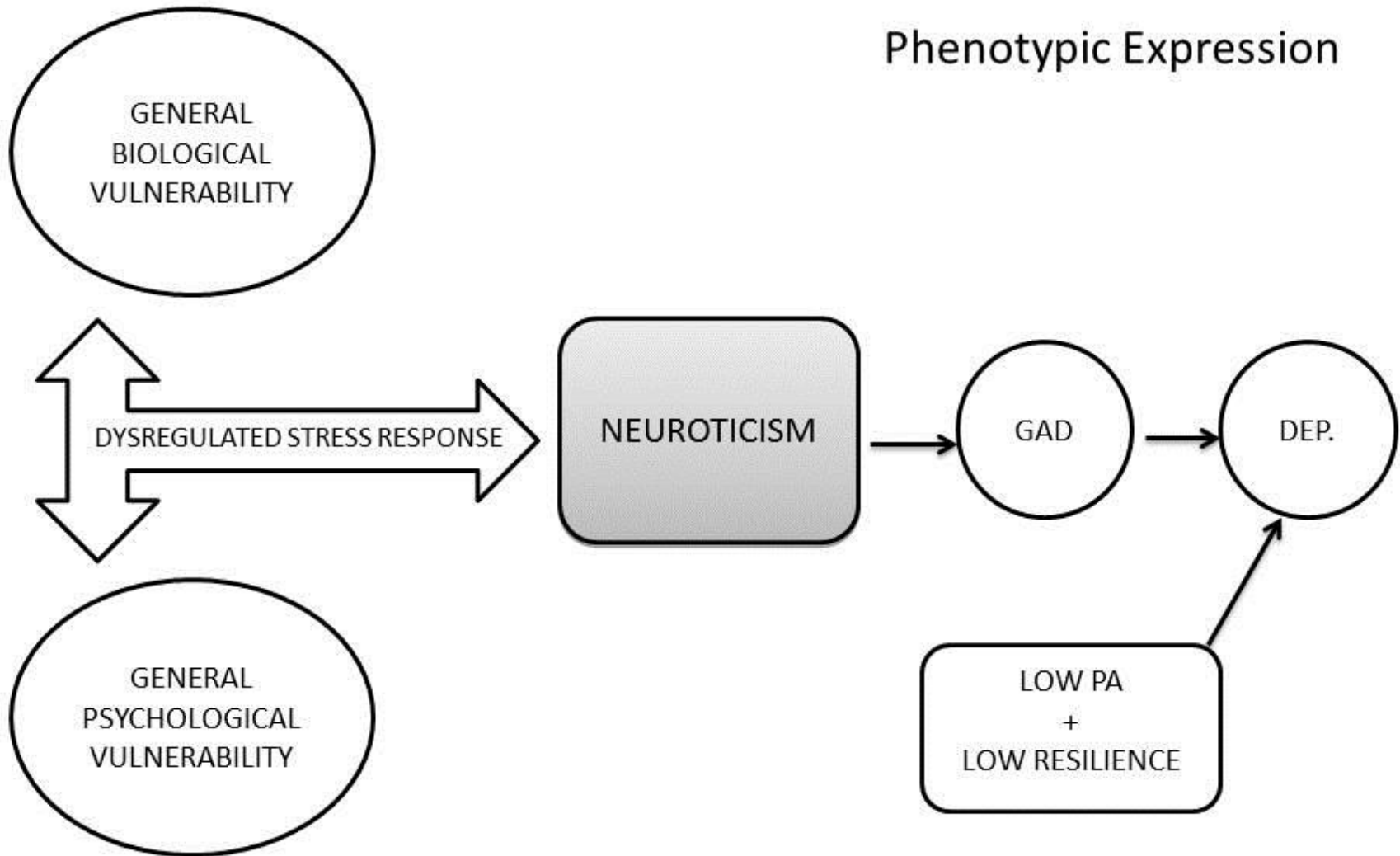
# Common Neurobiological Syndrome

- Hyperexcitability of limbic structures (amygdala overactivation).
- Inefficient or dysregulated cortical inhibition of amygdala responding.
- Deficient pattern separation.

Found in:

- SAD (Phan et al., 2006), GAD (Etkin et al. 2010), PTSD (Shin et al., 2005), Depression (Holmes et al., 2012) and neuroticism itself (Keightly et al., 2003).

## Phenotypic Expression



Mediating Stressful and  
Emotional  
Experiences in Genesis of  
Specific Emotional Disorders



# Panic Attack

## SUBJECT I



# Means and Standard Deviations for Stimulus-Naïve Participants on Measures of Emotional Appraisal and Regulation during the First Emotion Induction

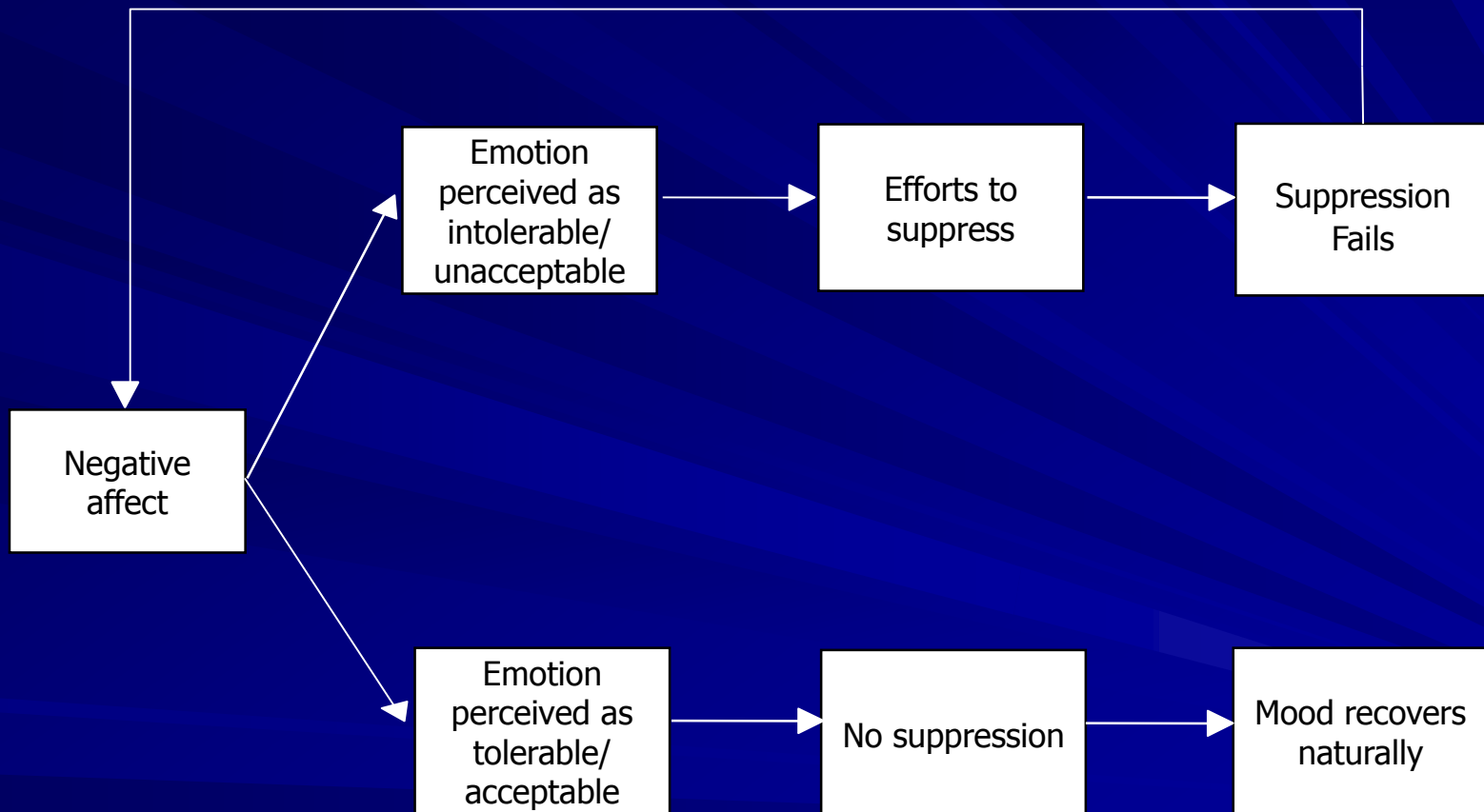
Measure	Clinical Participants	Nonclinical Participants
MES-A	23.37 (5.22)	26.26 (2.74)*
MES-C	22.67 (5.43)	24.04 (4.72)
SUPP	3.50 (2.17)	2.11 (2.03)*
MRS-R	12.28 (5.50)	11.96 (5.57)
MRS-M	15.52 (5.03)	15.67 (4.30)
SELF	5.07 (2.64)	6.33 (2.18)**
WILL	5.72 (2.46)	6.36 (2.30)

*Note.* Values are mean scores with standard deviations in parentheses.  
MES-A = Meta Evaluation Scale-Acceptability; MES-C = Meta Evaluation Scale-Clarity;  
SUPP = Suppression Rating; MRS-R = Meta Regulation Scale-Repair;  
MRS-M = Meta Regulation Scale-Maintenance; SELF = Self Efficacy Rating;  
WILL = Willingness Rating.

\*  $p < .02$

\*\*  $p < .05$

# Model of the Persistence of Emotional Distress Featuring Perceived Unacceptability of Emotions and Resulting Emotional Suppression/ Avoidance



Associated constructs reflecting  
these functional relationships  
(Negative reactivity and perceptions of lack of  
control of intense emotion)

- Increased anxiety sensitivity
- Decreased mindfulness
- Experiential avoidance (emotional suppression, worry, rumination)
- Negative appraisals and attributions

# Examples of Avoidance Strategies

## Behavioral and Interoceptive Avoidance

<u>Avoidance Strategy</u>	<u>Disorder Often Associated</u>
<i>Situational avoidance/escape</i> Avoidance/escape from phobic situations (e.g., crowds, parties, elevators, public speaking, theaters, animals)	PD/A, SOC, SPEC
<i>Subtle behavioral avoidance</i> Avoidance of eye contact (e.g., wearing sunglasses)	SOC
Avoidance of sensation-producing activities (e.g., physical exertion, caffeine, hot rooms)	PD/A
Avoidance of “contaminated” objects (e.g., sinks, toilets, doorknobs, money)	OCD
Perfectionistic behavior at work or home	GAD, SOC, OCD
Procrastination (avoidance of emotionally salient tasks)	GAD, DEP
<i>Repetitive or ritualistic behaviors</i> Compulsive acts (e.g., excessive checking, cleaning)	OCD

# Examples of Avoidance Strategies

## Cognitive and Emotional Avoidance

Avoidance Strategy \_\_\_\_\_ Disorder Often Associated

### *Cognitive avoidance/escape*

Dissociation (depersonalization, derealization)	PDA, PTSD
Distraction (e.g., reading a book, watching television)	GAD, DEP, PD/A
Avoidance of thoughts or memories about trauma	PTSD
Effort to prevent thoughts from coming into mind	OCD, PTSD
Worry	GAD
Rumination	DEP
Thought Suppression	All Disorders

### *Safety Signals*

Carrying a cell phone	PD/A, GAD
Holding onto “good luck” charms	OCD
Carrying water or empty medication bottles	PD/A
Having reading materials always on hand	SOC, GAD
Carrying self-protective materials (e.g. mace, siren)	PTSD

# Present Status: A Crossroad

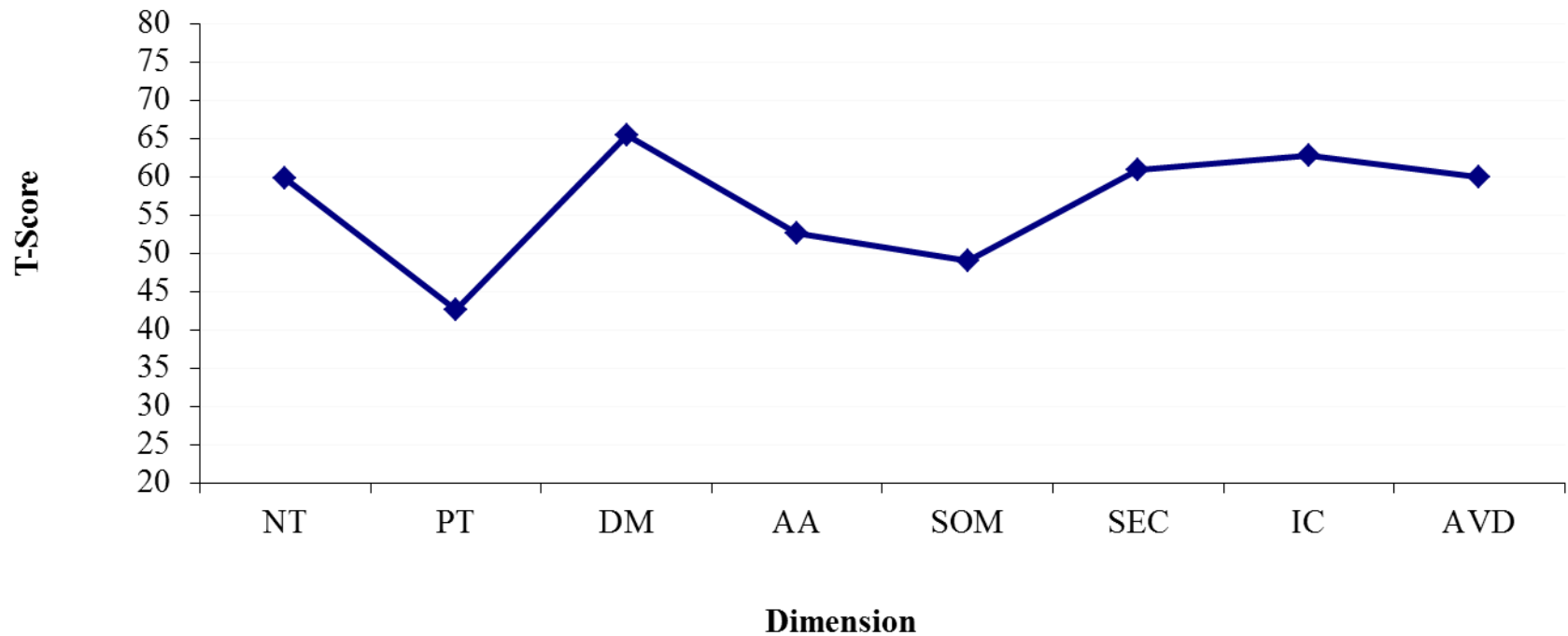
- Effective treatment, but plenty of room for improvement
- Too many distinct protocols—manuals
- Protocols still relatively complex-restricting disseminations

# Development of a Transdiagnostic Unified Treatment



# Multi-dimensional emotional disorders inventory (MEDDI)

**Intrusive-Social-Depressed ( $n = 22, 9.7\%$ )**



# Unified Protocol: *A Modular Approach*

Module 1: Motivation Enhancement for Treatment Engagement  
(1 session)

Module 2: Psychoeducation and Treatment Rationale (1-2 sessions)

Module 3: Emotional Awareness Training (1-2 sessions)

Module 4: Cognitive Appraisal and Reappraisal (1-2 sessions)

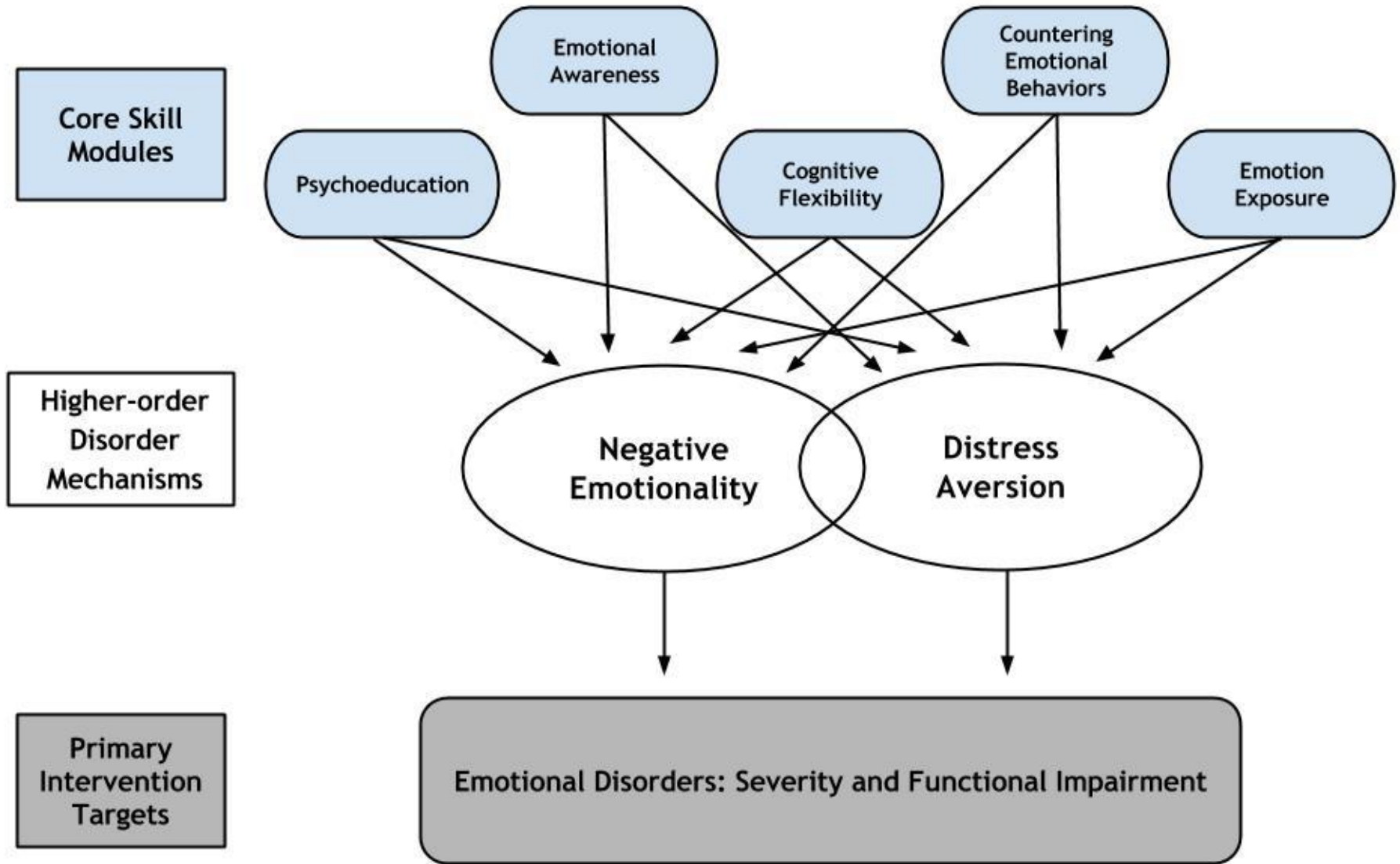
Module 5: Emotion Driven Behaviors (EDBs) and  
Emotional Avoidance (1-2 sessions)

Module 6: Interoceptive Awareness and Tolerance (1-2 sessions)

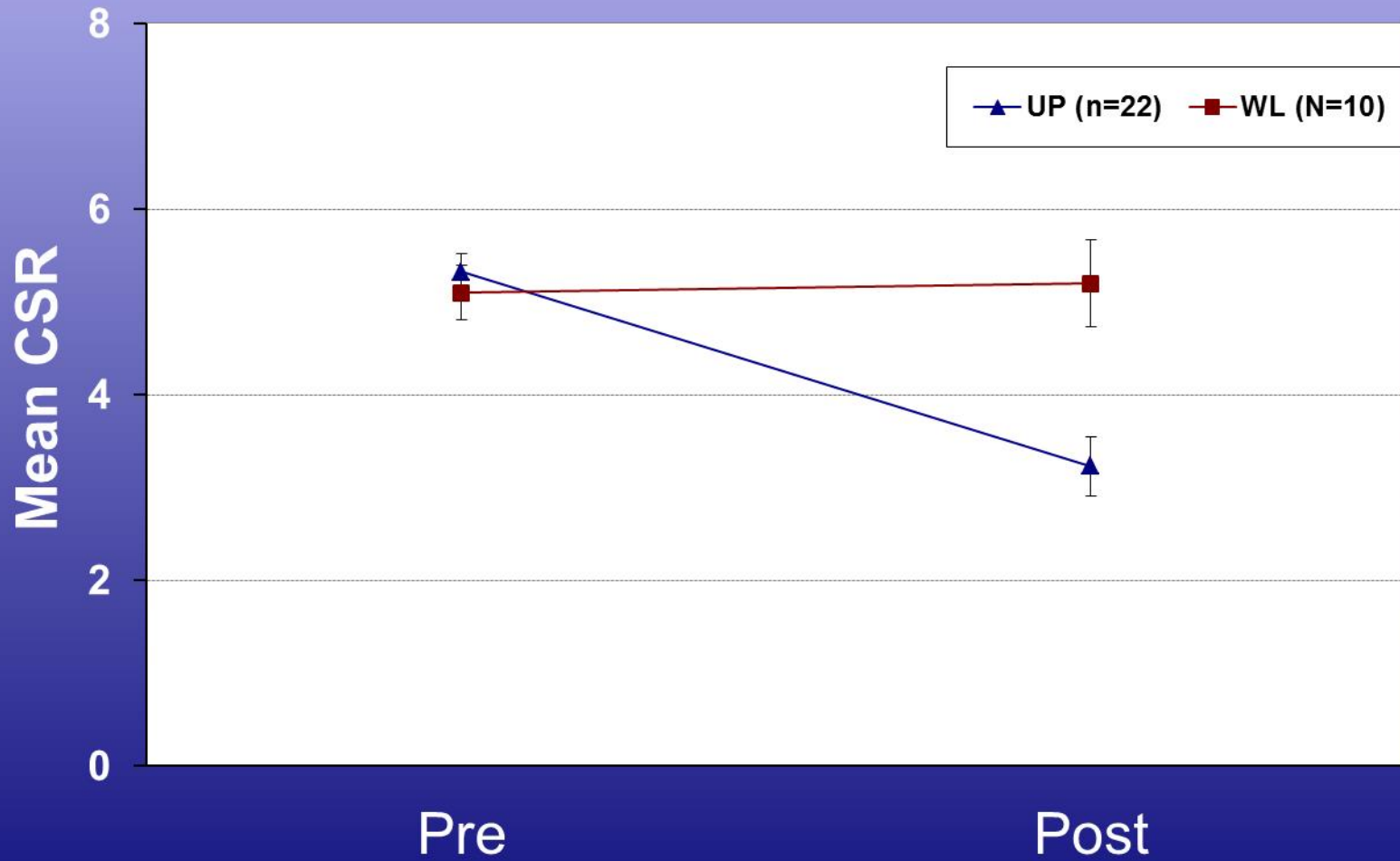
Module 7: Situational Exposures (3-6 sessions)

Module 8: Relapse Prevention (1 session)

*Barlow et al., 2011*



# ADIS-IV Principal Diagnosis



$F(1,30) = 23.18, p < .001, \eta_p^2 = .436, d = 1.76$

# Proportion Achieving Responder Status and High End-State Functioning: ADIS-IV Principal Diagnosis CSR

<i>Study Condition</i>	<i>Post- Treatment / WL</i>			<i>6-Month Follow-Up</i>		
	<b>N</b>	<b>%Treatment Responders</b>	<b>% HES Fx</b>	<b>N</b>	<b>%Treatment Responders</b>	<b>% HES Fx</b>
<b>UP Treatment</b>	<b>22</b>	<b>55%</b>	<b>55%</b>	<b>20</b>	<b>75%</b>	<b>75%</b>
<b>WL Control</b>	<b>10</b>	<b>0%</b>	<b>0%</b>			

*Note:* HES Fx= High End-State Functioning.

# Effects on NA – UP Version 2.0

- Significant effect of time on NA ( $F_{1,13}=10.55, p<.001$ )
- Clinical significance of change in NA:
  - Pre-treatment – 27% patients achieved scores within normal range
  - Post-treatment – increased to 67% (as compared to 56% in study 1)
  - 6-month follow-up – increased further to 82%

Associated constructs reflecting  
these functional relationships  
(Negative Reactivity and Perceptions of lack of  
control of intense emotion)

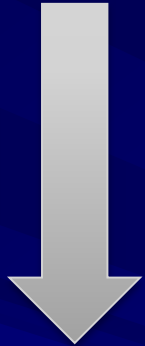
- Increased anxiety sensitivity–(UP–interoceptive exposure)
- Decreased mindfulness–(UP–mindful emotional awareness)
- Experiential avoidance (emotional suppression, worry, rumination) –UP –countering EDP and emotional avoidance
- Negative appraisals and attributions– (UP–cognitive reappraisal)

# Efficacy Evaluation of UP

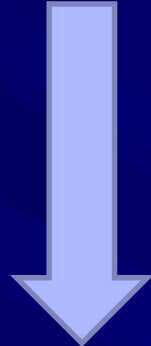
- NIMH R01: 2010 – 2015,
- N=250
- UP: N=100
- SDP (GAD, PDA, SOC, OCD): N=100
- Waitlist: N=50
- Non inferiority (equivalence) trial



# PDA



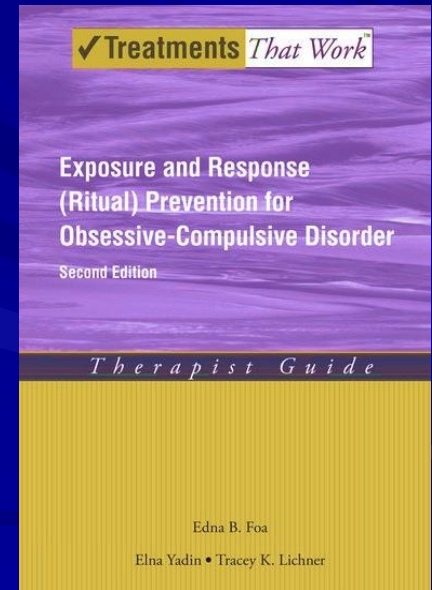
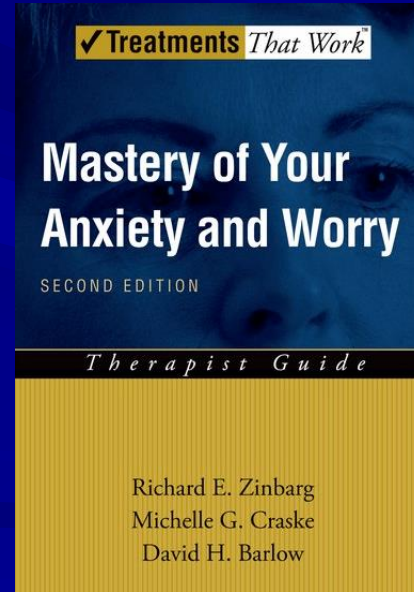
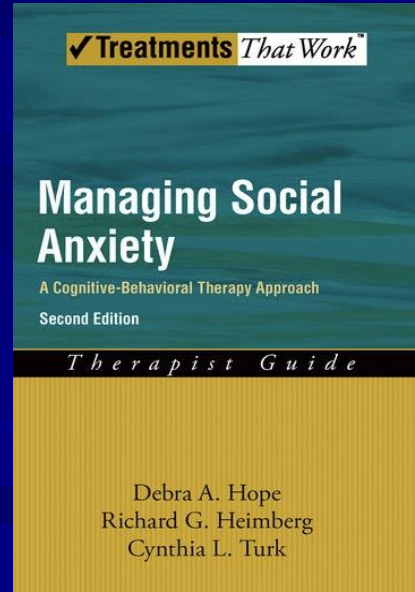
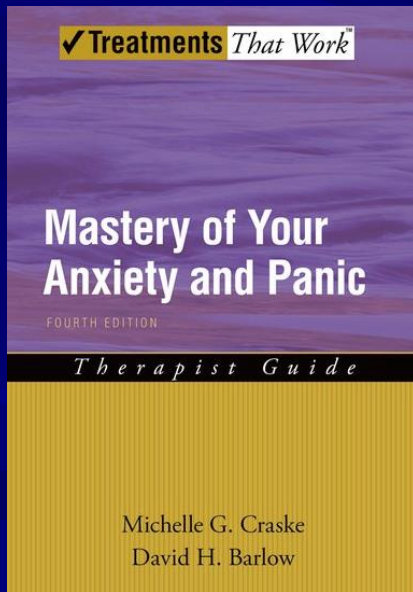
# SOC



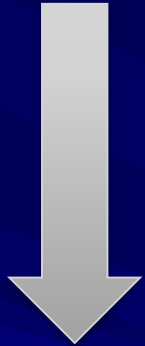
# GAD



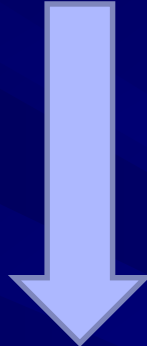
# OCD



# PDA



# SOC



# GAD



# OCD



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**Unified Protocol for  
Transdiagnostic Treatment of  
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*Therapist Guide*

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# Increasing PA

- Individuals with a range of anxiety disorders or symptoms exhibit a decreased tendency to “savor” or maintain positive emotions as well as an increased tendency to “dampen” or minimize positive emotions.
- Treatment module in development to target specific disturbances in positive emotion regulation (Carl in progress).

# Positive Affect

- In MDD—dose-response relationship between exercise and increase in PA (Mata et al., 2012).
- Increases in neurogenesis (after exercise in animals) (Speisman et al., 2012)

# Take Home Messages

- “Splitting” no longer supported empirically or clinically
- Higher-order temperaments better account for:
  - Description of emotional disorders
  - Origins of Emotional Disorders
- Developing treatments distill common principles to treat transdiagnostic temperamental features

# Thank You

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