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PRODO

Interpretation biases and stress reactivity in youth

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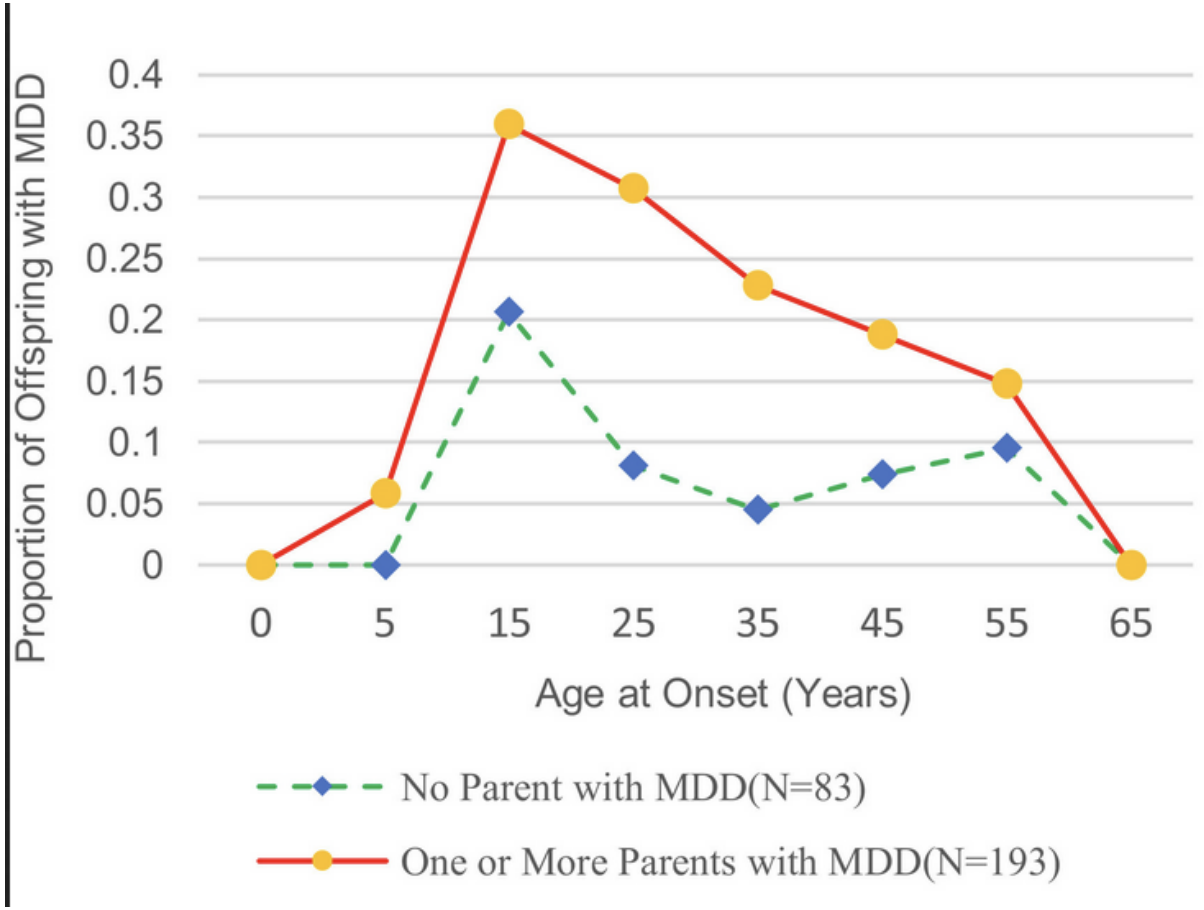
LMU University Hospital

25.10.2025

← Slides here

Children of parents with depression

Mental health risk



- **Large meta-analysis** (Uher et al., 2023)
  - **RR = 2.3** for depression
  - **50% lifetime** prevalence for any illness
- **WHO** calls for improved preventive interventions
- Existing interventions for this population effective (RR = 0.56) (Löchner et al., 2018) but modest

Fig. 1 from: Weissman et al. (2021) EClinicalMedicine

Children of parents with depression
The role of cognitions

total i winner a loser ar

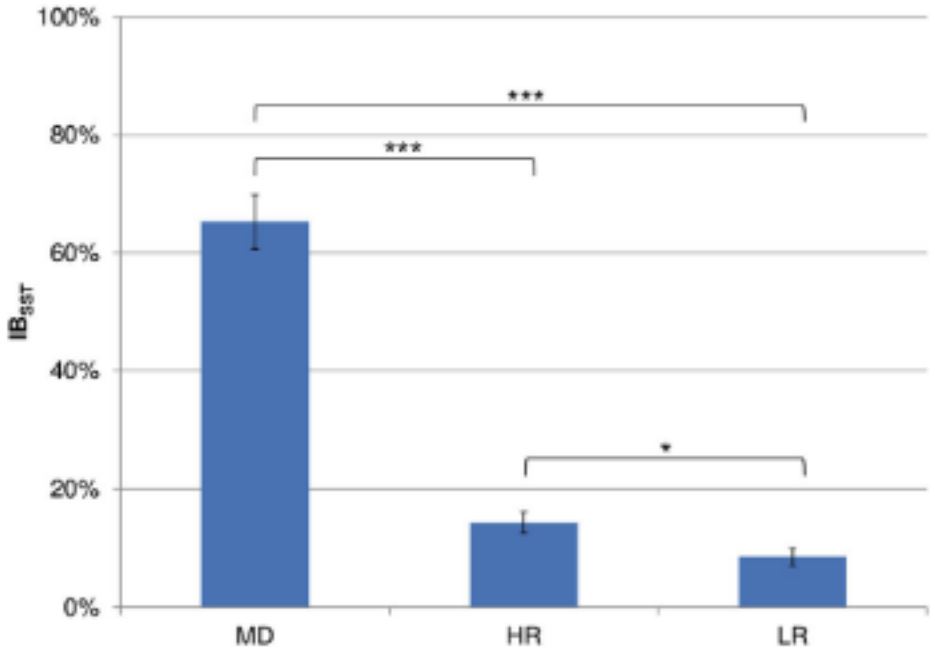


Fig. 4 IB_{SST} scores for the three groups. Error bars represent standard errors. Significant group differences are indicated: *** $p < .001$, * $p < .05$

Figure 4: Sfärlea et al. (2020), J Abnorm Child Psychol p. 1344.

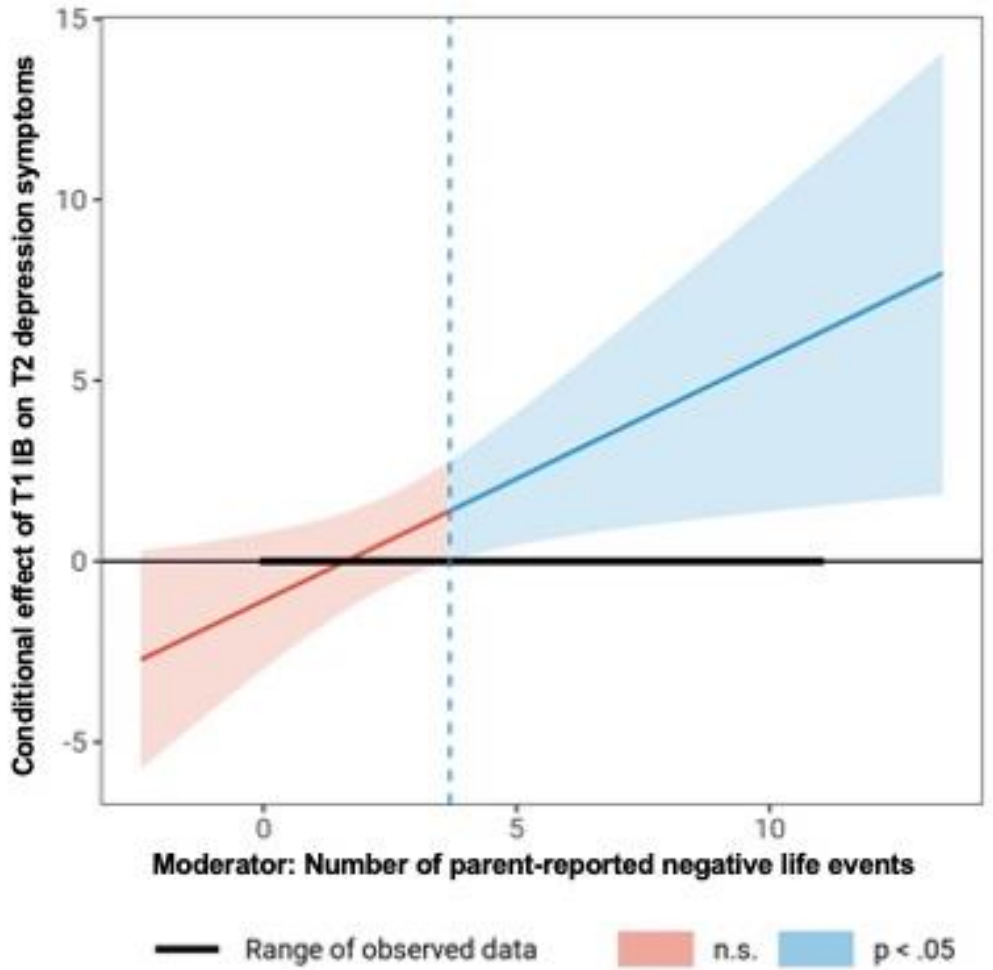


Figure 3: Platt, Sfärlea et al., (2023) Journal of Experimental Psychopathology

Children of parents with depression
The role of stress reactivity and recovery

Alterations in stress response characterise children of parents with depression…

- …even when symptoms of depression are controlled for (Barry et al., 2015)
- …with a dose-dependant effect (Dougherty et al., 2013)
- …may be moderated by temperament (Mackrell et al. 2014)
- …are not always replicated (Gotlib et al., 2015; Waugh et al., 2012)

Children of parents with depression

Does cognitive vulnerability influence stress response?

Cognitive vulernerability and stress response correlate...

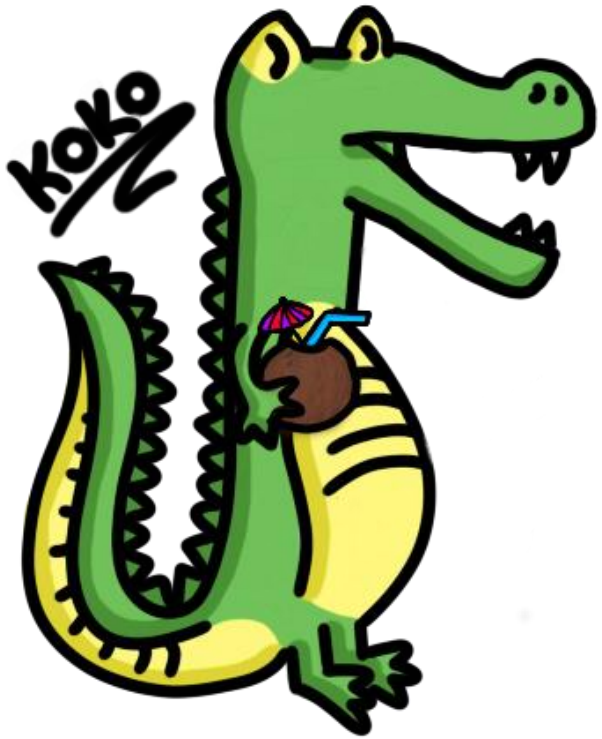
- in adults (e.g. Zoccola and Dickerson, 2012)
- in youth (Bäumler et al., under review)

Predictive role of cognitive vulnerability...

- longituinally in youth (Chen and Mathews, 2001)
- experimentally in youth (Telman et al., 2013)

No studies in children of parents with depression

The CoCo study
Research questions



Do **children of parents with depression** show...

1. More **negative interpretations**
2. Heightened stress **reactivity**
3. Delayed stress **recovery**

...compared to children of parents with no mental illness?

4. Are **IB** and stress reactivity/recovery (**SR**) **associated**?

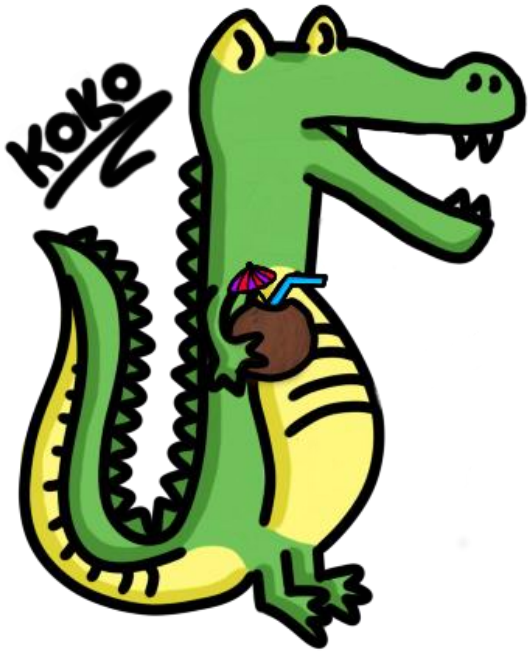





Frommelt et al. (2023) BMC Psychiatry

The CoCo study

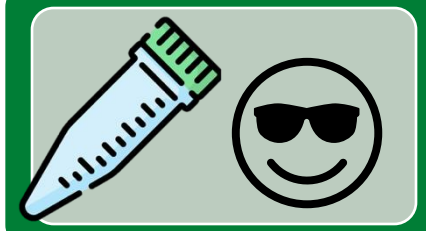
Study measures



Interpretation bias: Scrambled Sentences Task (SST) for children. Percentage negative sentences.

Stress reactivity (baseline-adjusted peak by 30 mins)

- Trier Stress Task for Children (TSST-C)
- Mood (SAM) and salivary cortisol



Stress recovery (Baseline-adjusted value at 45 mins)

- Trier Stress Task for Children (TSST-C)
- Mood (SAM) and salivary cortisol

The CoCo study

Study sample

Characteristics	HR (n = 80)	LR (n = 77)
Gender (female)	57.5 %	55.8 %
Age M (SD) *	12.0	12.5
Puberty stage	2.69 (1.06)	2.91 (1.00)
Symptoms of **depression** M (SD) - RCADS	50.2 (9.47)	47.3 (8.61)
Symptoms of **anxiety** M (SD) - RCADS	44.7 (9.88)	44.0 (8.36)
Childhood **trauma** M (SD) - CTQ	31.8 (4.81)	31.5 (4.89)

* $t(155) = 2.03$, $p = .044$*, 95% CI [0.01, 0.85]

Frommelt et al. (submitted)

The CoCo study

Validation of the stress induction

The **TSST-C** was associated with a **significant** stress response:

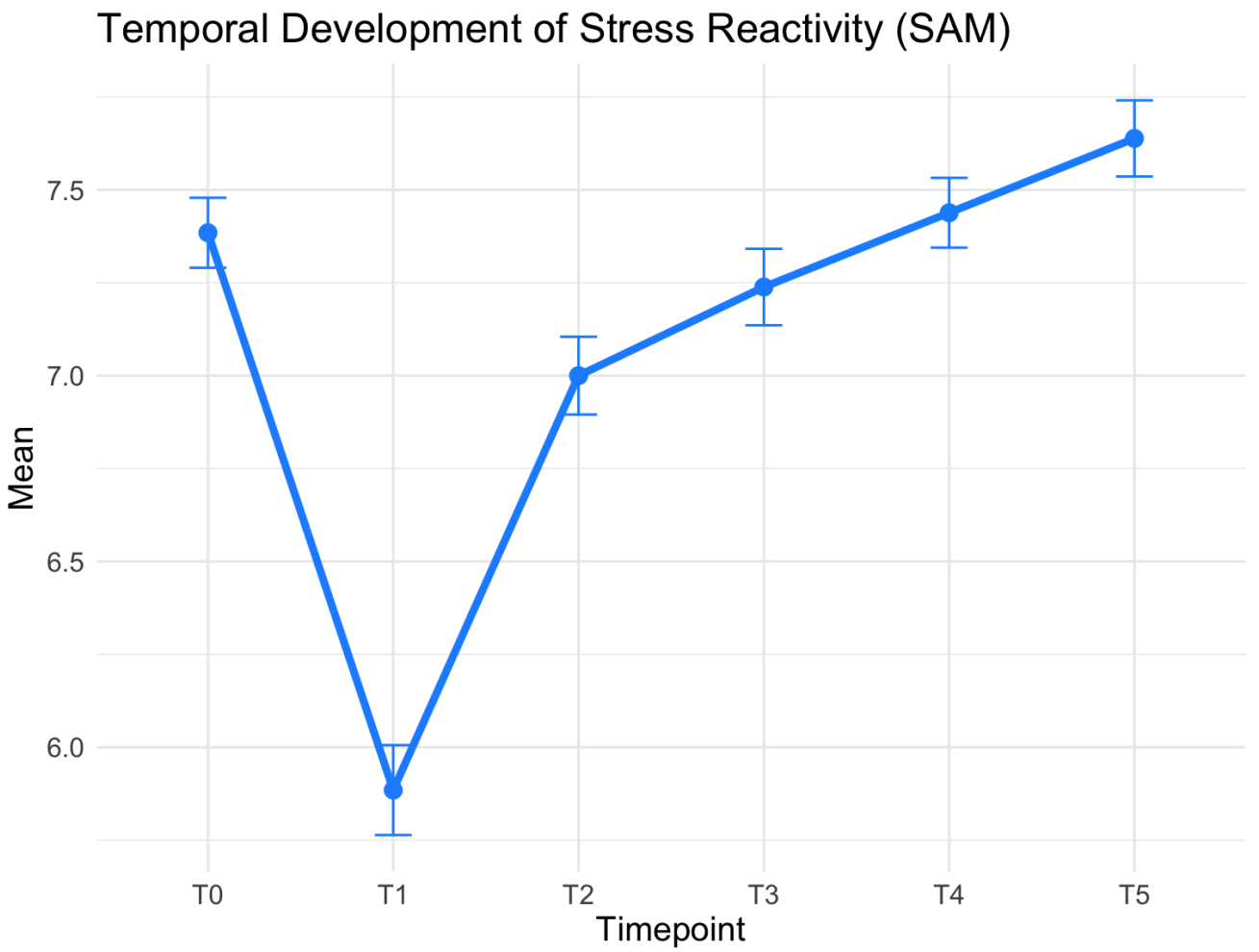
Change in mood (T0 - T1):

t(156) = 15.95, *p* < .001, ***d* = 1.27**, 95% CI [1.06, 1.48]

Change in cortisol (T0 – T1):

t(155) = 14.24, *p* < .001, ***d* = 1.14**, 95% CI [0.94, 1.34]

Frommelt et al. (submitted)



The CoCo study

Group-based differences in IB

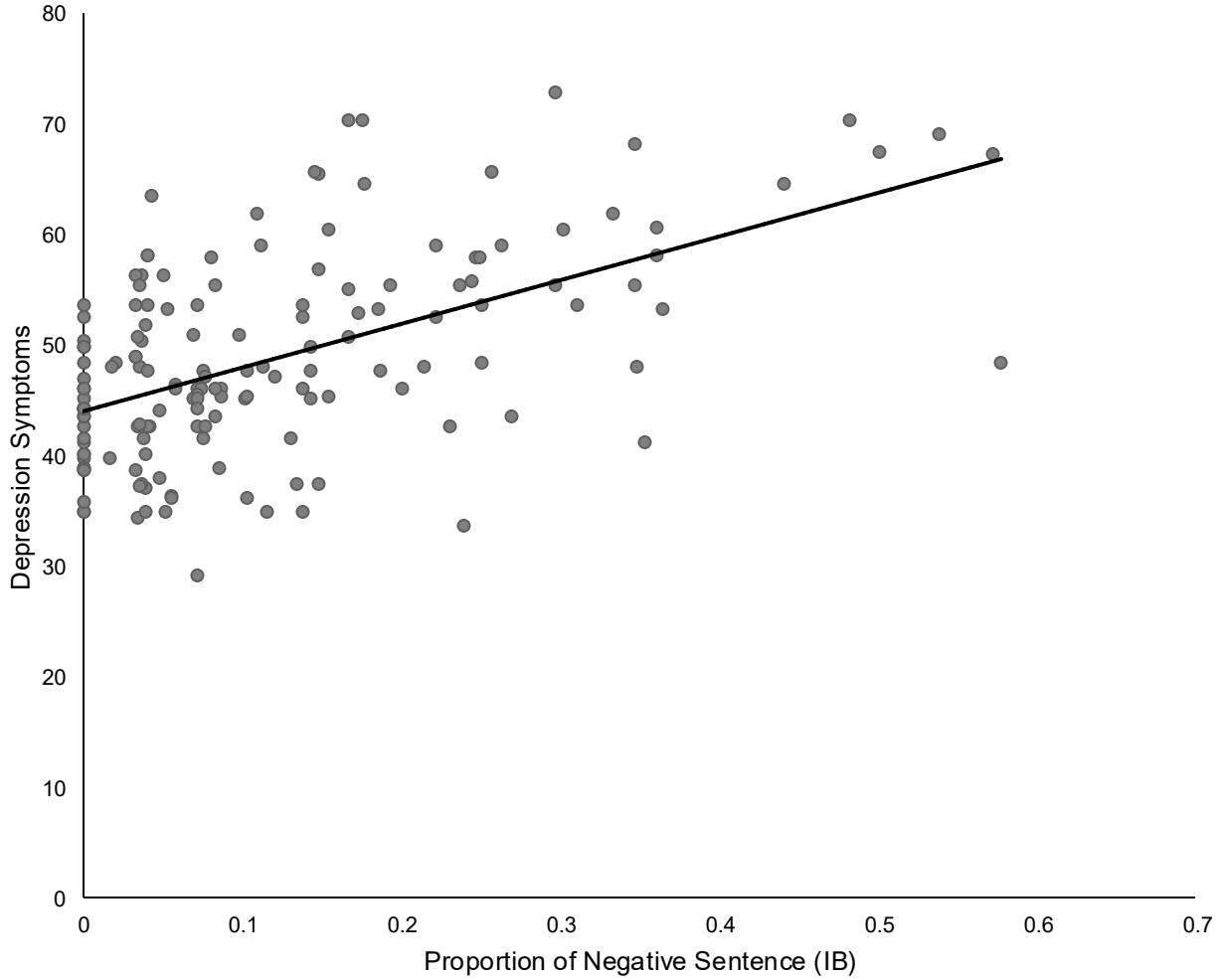
RQ1: Do the groups differ in IB?

No: both groups solved 12.0% of sentences negatively:

$t(155) = 0.02, p = .982$, 95% CI [-0.04, 0.04]

However: IB was predicted by depression:

$\beta = 0.29, p = .002$



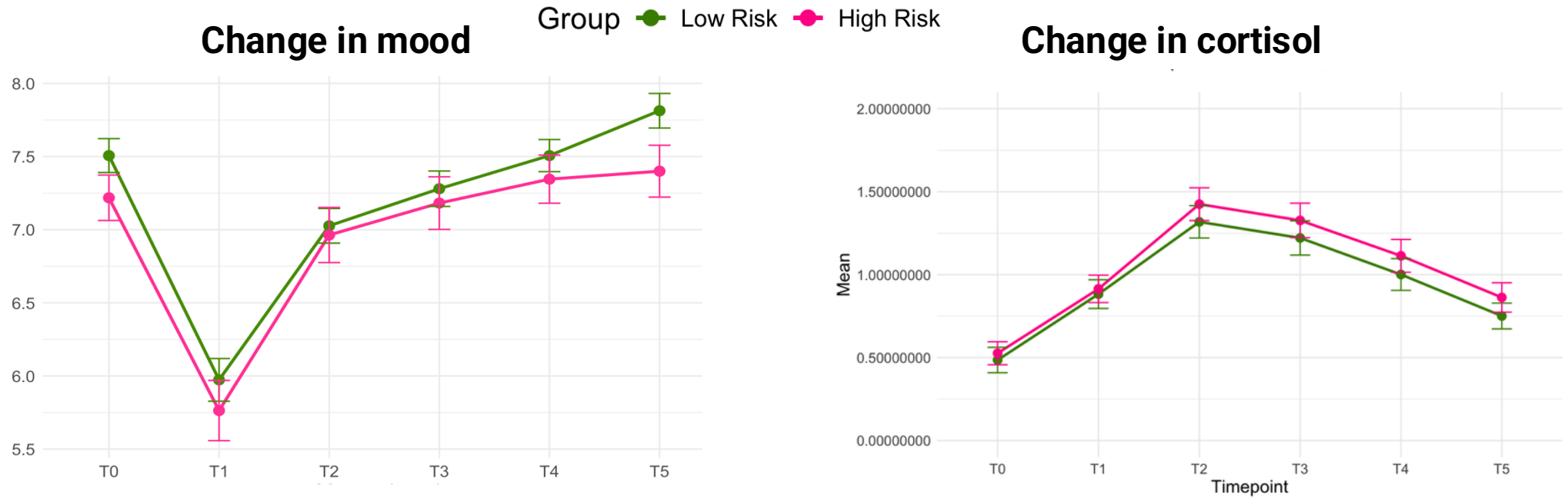
Frommelt et al. (submitted)

The CoCo study

Group-based differences in stress response

RQ2 + 3: Do the groups differ in stress reactivity and stress recovery?

No: groups should similar mood and cortisol levels during all phases



→ Across groups **baseline** cortisol correlated with cortisol **reactivity** (-.29*), **recovery** (-.40*) and symptoms of **depression** (.17*)

Frommelt et al. (submitted)

The CoCo study

Association between IB and stress response

RQ4: Are IB and stress response cross-sectionally associated?

No correlation between IB and:

- Stress reactivity (neither mood nor cortisol)
- Stress recovery (neither mood nor cortisol)

Within the high-risk (HR) group IB correlated with:

- cortisol reactivity (-.24*) and recovery (-.28*)

Baseline cortisol moderated IB x Depr.

Frommelt et al. (submitted)

The CoCo study

Interpretation of findings

1. Cognitive vulnerability better predicted by symptoms of depression rather than parental mental health

→ Questions appropriateness of universal CBM-I training for this population

2. No group differences in stress response

→ Unlikely to be a methodological artefact, role of moderators?

3. Only partial association between IB and stress response (in HR group)

→ Greater variability in the HR group

→ Unexpected moderating role of baseline cortisol

The CoCo study
Strengths and Weaknesses

Strengths

- HR population in developmental period before prevalence increases
- Valid diagnostic instruments for parents and children
- Gold-standard stress task
- Multimodel measures

Weaknesses

- Cross-sectional design
- Homogeneous sample in terms of SES

The CoCo study
Summary

- Improved models of transgenerational transmission could help inform more effective preventive interventions for depression
- Current study questions the robustness of previous findings regarding
  - Presence of IB in children of parents with depression
  - Association between IB and stress response
- No evidence for assosciations between IB and SR
- However, findings could reflect high SES of two groups

Thank you!

Belinda.platt@med.uni-muenchen.de

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The CoCo study

Study procedure

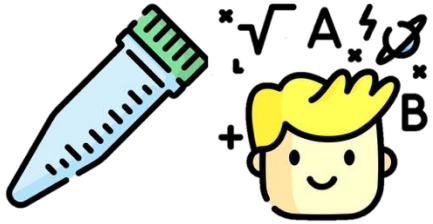
DFG Deutsche Forschungsgemeinschaft

Online Diagnostics

204 children and their parents

(1 week later)

Session 1



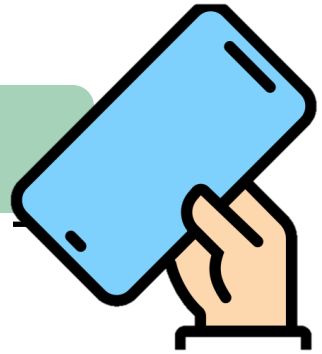
Measure IB and stress reactivity
(80 HR, 77 LR)

IB training (45 HR)
1 session in the lab

20 training sessions online

Placebo Training (45 HR)
1 session in the lab

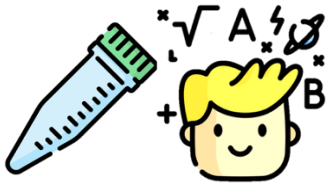
20 training sessions online



(4 weeks later)

Session 2

Measure IB and stress reactivity



Measure IB and stress reactivity